

MIND & BODY

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EMF

The Invisible Hazard

PART 2 THE UNSETTLING RISE OF MICROWAVE SYNDROME

Is a rapid increase in daily radiation exposure linked to this bewildering condition?

Our wireless world is built on increasingly powerful radiation-emitting infrastructure.

By Marina Zhang

In this series, we explore the omnipresent effects of electromagnetic fields—from common home electronics to 5G—and their impacts on the brain and body.



Previous Parts:
TheEpochtimes.com/EMF

Courtney Gilardi's 10-year-old daughter never had problems sleeping. But in August 2020, the morning after a 5G cell tower was switched on within 450 feet of their Pittsfield, Massachusetts, home, she woke up complaining of headaches, dizziness, a buzzing in her head, and general malaise.

Normally, she gets up at 8 a.m. But on that day, she didn't come downstairs till the afternoon.

"She didn't look well, and she said that she was headachy, dizzy, buzzy. Those are not words that she has ever used to

describe how she's been feeling before," Ms. Gilardi said.

The girl, her sister, and Ms. Gilardi herself, who said she started experiencing sleep disturbances, rapid heart rates, and migraines, were soon diagnosed with microwave syndrome, a condition known to develop after a person is exposed to electromagnetic fields (EMFs) emitted by wireless technologies.

The doctor's advice was simple: Stay away from your home.

Microwave Syndrome: What Is It and How Does It Harm You?

Microwave syndrome refers to sensitivity and symptom development caused by environmental microwave

radiation. This is the same type of radiation that's used to heat food in microwave ovens.

People are primarily exposed to microwave radiation through wireless devices and antennas. Cellphone towers, Wi-Fi modems, phones, tablets, smart wearables, and smart home appliances continuously emit these waves 24 hours per day, 365 days per year.

Symptoms of microwave radiation exposure include insomnia, headaches, fatigue, stress, pain, and even skin rashes. Individuals with chronic diseases may experience a worsening of preexisting symptoms as part of microwave syndrome, according to research.

Continued on Page 2

Could Dentists Help Stop Systemic Diseases?

By Amy Denney

Controversial oral microbiome test highlights discord among professionals

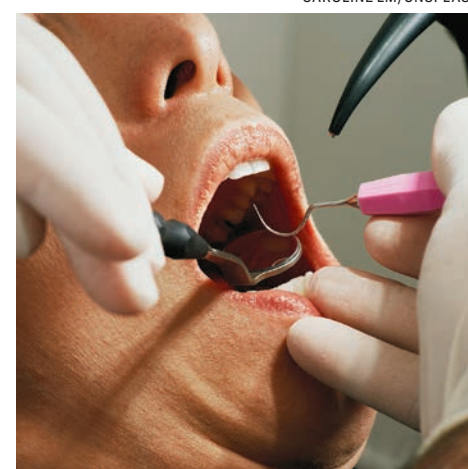
There's a continual battle in our mouths among microscopic bacteria, viruses, and fungi. Unfortunately, most patients are unaware they're vulnerable to pathogenic microbes until it's too late.

There's a simple way to know ahead of time. Some dentists advocate for saliva tests of the oral microbiome that might help prevent some 57 non-oral diseases

that are now associated with periodontal disease. But most dentists don't offer it. Neither do medical doctors. Insurance doesn't cover it. And many professionals aren't convinced the test matters much.

This is one example that critics say sows discord among dental and medical professionals who could be collaborating for oral-systemic disease prevention and treatment. At least one organization—the

Continued on Page 6



Dentists could be at the forefront of preventing certain diseases, suggests new research.

EMF

The Invisible Hazard

PART 2 THE UNSETTLING RISE OF MICROWAVE SYNDROME

As our radiation exposure increases, so do concerns of possible harms

Continued from Page 1

Microwave Radiation's Health Effects: Current Findings

Microwave radiation's health effects have long been debated, with industry-funded studies often concluding no link between exposure and health.

Randomized human studies are lacking due to ethical considerations, but prospective studies on humans, animals, and cells suggest potentially harmful biological effects.

Naval Medical Research

In 1971, researchers at the Naval Medical Research Institute published a report on the biological effects of electromagnetic fields, including radio frequency and microwave radiation. The report examined their effects on humans, animals, and cells.

Professor Martin Pall from Washington State University, who specializes in chronic fatigue syndrome, multiple chemical sensitivity, and the effects of low-intensity microwave frequency electromagnetic fields on the human body, summarized the biological effects as follows:

- Forty neuropsychiatric effects, including changes in brain structure, brain function, psychological responses, and behavior.
- Eight hormonal effects, including hyperthyroidism and pituitary dysfunction.
- Cardiac effects, including decreased heart activity and changes in heart rhythm.
- Chromosome breaks and changes to chromosome structure.
- Histological changes to the testes.
- Cell death, an important process in neurodegenerative diseases.

Other biological effects included changes to metabolism and digestion.

The Bioinitiative Report

The Bioinitiative Report, co-authored by Dr. David Carpenter, professor of environmental health sciences at the University at Albany School of Public

Health, investigated the correlation between EMFs and health. It found that adverse biological reactions can be triggered even at levels far below the industry standards of maximum body exposure, set at 1.6 watts per kilogram. The current standard is based on the assumption that microwave radiation affects the body solely through heat, disregarding its non-thermal effects.

However, exposure to nonthermal EMF radiation at a chronic level of 0.00034 microwatts through mobile phones has been linked to a significant reduction in sperm count. Microwatts represent a millionth of a watt.

Furthermore, children and adolescents exposed to 0.02 microwatts for a short period reported symptoms such as headaches, irritation, and difficulties with concentration in school, according to the report.

"There is really no level that you could say with absolute confidence that it was safe for everybody," Dr. Carpenter told *The Epoch Times*.

He added that setting a standard with no biological effects is unrealistic given the rapid growth in wireless technology use since the report's publication in 2007, leading to increased microwave radiation exposure for individuals.

While the report faced scrutiny for its lack of peer review, all of its included studies were subject to peer review.

The Moscow Signal

Between 1953 and 1976, a microwave transmission was directed at the U.S. Embassy in Moscow. It ranged between 2.5 and 4 gigahertz, which

aligns with the frequency range of today's Wi-Fi and 4G networks.

Although the U.S. government eventually determined that the exposure was an espionage attempt with no significant health effects on embassy staff, this conclusion has been disputed. In 1975, Walter Stoessel Jr., the U.S. ambassador to the Soviet Union, became sick, experiencing bleeding from the eyes and later succumbing to leukemia. Other embassy personnel also developed cancer, fueling the controversy surrounding the link between microwave radiation and cancer.

A year later, the U.S. Department of State commissioned a study comparing the health outcomes of Moscow embassy staff and their families to counterparts from Eastern European cities, who were assumed to have not been subjected to the same exposure. The study found that the staff in

Moscow suffered no significant ill effects from the microwave exposure. A 2019 review of the epidemiological study suggested that the original findings were toned down by the Department of State and that some key questions remain unanswered.

"Levels of exposure were much higher, and both the number and the severity of symptoms increased dramatically with the 5G antennas," Ms. Havas said.

The severity of microwave syndrome varies from person to person. Some people can tolerate a certain level of EMF exposure, while others experience such severe adverse reactions that they're unable to use electronic devices, even those not emitting wireless radiation.

Who's Most Vulnerable to Microwave Syndrome? Studies have shown that children and women are more susceptible to developing EMF sensitivity than men.

Individuals with chronic diseases, including chronic fatigue and multiple chemical sensitivity, or previous injuries or traumas are also at a higher risk. Previous injuries can include physical incidents or intense exposures to environmental toxins such as mold, chemicals, and EMFs.

"If you have one of these kinds of diseases, you're much more likely to have others," Dr. Carpenter said.

Additionally, any form of damage to the central nervous system heightens susceptibility to radiation. This sort of damage affects people with diseases such as Lyme disease, individuals taking certain medications, or those with compromised immune systems, according to Ms. Havas.

"People with multiple sclerosis, Parkinson's disease, or any kind of neurodegenerative disease typically experience worse symptoms in electromagnetically exposed environments," she said. "Conversely, their symptoms subside to a certain degree when they are in an electromagnetically clean environment."

Tips to Alleviate Microwave Sensitivity

Some people with EMF sensitivity may experience such severe symptoms that they find it challenging to venture beyond their room or home. However, there are treatment options to help them. Dr. Elizabeth Seymour, a family medicine specialist at the Environmental Health Center in Dallas, told *The Epoch Times*.

Reduce Environmental Pollutants

Taking measures to prevent exposure

netic radiation at Trent University, told *The Epoch Times*.

Since most microwave syndrome symptoms are pretty vague and common, many people may be sensitive to electromagnetic radiation emitted from wireless devices but are simply unaware of it, she added.

A 2009 letter to the editor of the journal *Electromagnetic Biology and Medicine* highlighted that only 0.06 percent of the Swedish population was EMF-sensitive in 1985. However, this figure rose to 9 percent in 2003, and it was estimated that by 2017, about 50 percent of the population could be affected.

A 2019 report observing more than 435,000 UK residents gave the most recent estimation of the prevalence of EMF sensitivity. The author estimated that 5 to 30 percent of the population has mild sensitivities, 1.5 to 3 percent has moderate sensitivities, and less than 1.5 percent has severe cases of sensitivity.

There has also been an increase in sensitivity following the switch from analog to smart digital meters, and the emergence of Wi-Fi in schools has raised concerns about children's cases, according to Ms. Havas.

"More recently, I'm hearing that as the [5G] small cells are being erected, more people are feeling unwell in their own homes," she said.

She pointed to a case study published by Swedish doctors in January that revealed that participants started experiencing symptoms after their apartments' 4G antennas were replaced with 5G antennas.

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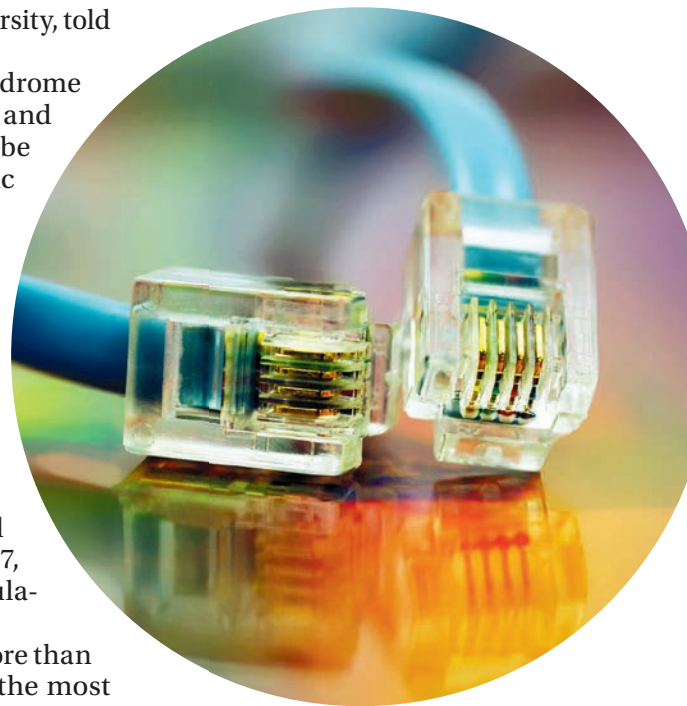
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Reduce Environmental Pollutants

Taking measures to prevent exposure



You can lower your radiation exposure by replacing your Wi-Fi router with a wired ethernet connection.

to EMFs is the initial step in addressing sensitivity. This approach helps reduce symptoms and allows the body to rest.

Here are some commonly recommended strategies, the details of which will be discussed in later parts of the series:

1. Turn off Wi-Fi and smart devices, and switch to airplane mode while sleeping.
2. Use wired connections, such as Ethernet modems, instead of Wi-Fi to connect to the internet.
3. Keep a clean living environment. EMF sensitivity can be triggered or exacerbated by factors such as mold, chemical sensitivity, and heavy metal toxicity.
4. Use an EMF meter. It can identify the frequencies that you're sensitive to.

Improve Individual Health

Some people may need more help in restoring their bodies to a normal state. The following are actions that can help improve overall health:

1. Undergo detox therapies to address mold, chemical, and heavy metal toxicities, if present alongside EMF sensitivity.
2. Supplement with vitamin C and melatonin, Dr. Seymour suggests. These antioxidants help neutralize the oxidation that EMF causes in the body.
3. Implement therapies aimed at rebalancing the immune system.
4. Get regular exercise and stay hydrated.
5. Improve dietary habits by consuming clean, wholesome food.

Health Issues Persist as Residents Battle Cell Tower Controversy

Other residents in Ms. Gilardi's neighborhood have been experiencing nausea, insomnia, and headaches since the installation of a nearby cellphone tower.

"They began fighting to have Verizon move the tower, but it continues to operate as legal proceedings are ongoing. Meanwhile, residents' symptoms worsened. Ms. Gilardi's daughters resorted to keeping a bedside bucket in case they vomit, while the youngest developed rashes.

"I just remember this one night when my youngest daughter said that she felt like her skin was crawling," Ms. Gilardi said. "She asked me to look at her skin, but there was nothing on her. ... I went upstairs and checked her bed, her sheets ... and there was literally nothing."

Finally, in April 2021, the family members sought refuge in their century-old rundown cottage, which lacks essential amenities. Despite its dilapidated state and pest problem, to Ms. Gilardi's surprise, her daughters slept peacefully the first night, without requiring assistance.

"I was like, 'Wow.' It was such a marked improvement," she said.

Ms. Gilardi and her daughters have since moved into the cottage, and all of their previous symptoms have disappeared.

FOOD AS MEDICINE

Turmeric May Prevent Fluoride From Destroying Your Brain

Researchers found that turmeric's active compound, curcumin, could negate pathogenic processes linked to fluoride exposure

By Sayer Ji

Fluoride's neurotoxicity has been the subject of academic debate for decades and is now a matter of increasingly impassioned controversy among the general public as well.

Its now well-known IQ-lowering properties have spurred many people, especially in the heavily fluoridated regions of the United States, to organize at the local and statewide levels to oust this ubiquitous toxicant from municipal drinking water.

A compelling study published in the journal *Pharmacognosy Magazine* titled "Curcumin Attenuates Neurotoxicity Induced by Fluoride: An In Vivo Evidence" adds experimental support to the suspicion that fluoride is indeed a brain-damaging substance, also revealing that a natural spice-derived protective agent appears effective against the various health effects associated with fluoride.

The 2014 study was authored by researchers from the Department of Zoology at the University College of Science, Mohanlal Sukhadia University, in Udaipur, India, who have spent a decade investigating the mechanisms through which fluoride induces severe neurodegenerative changes in the mammalian brain, particularly in cells of the hippocampus and cerebral cortex.

The study opens by describing the historical backdrop for concern about fluoride's significant and wide-ranging toxicity.

"Fluoride (F) is probably the first inorganic ion which drew [the] attention of the scientific world for its toxic effects and now the F toxicity through drinking water is well-recognized as a global problem. Health effect reports on F exposure also include various cancers, adverse reproductive activities, cardiovascular, and neurological diseases," the study reads.

The study focused on fluoride-induced neurotoxicity, identifying excitotoxicity (stimulation of the neuron to the point of death) and oxidative stress as the two main drivers of neurodegeneration.

Subjects with the condition known as fluorosis, a mottling of tooth enamel caused by excessive exposure to fluoride during tooth development, have also been found to have neurodegenerative changes associated with a form of oxidative stress known as lipid peroxidation (rancidity).

Excess lipid peroxidation in the brain can lead to a decrease in total brain phospholipid content.

Owing to these well-known mechanisms of fluoride-associated neurotoxicity and neurodegeneration, the researchers identified the primary polyphenol in the spice turmeric—known as curcumin—as an ideal agent worth testing as a neuroprotective substance.

Previous research on curcumin indicates that it's capable of acting as an antioxidant in three distinct ways: by protecting against singlet oxygen, hydroxyl radicals, and superoxide radical damage. Also, curcumin appears to raise endogenous glutathione production in the brain, a major antioxidant defense system.

In order to assess the neurotoxic effects of fluoride and prove curcumin's protective role against it, researchers randomly divided mice into the following four groups for 30 days:

1. Control (no fluoride)
2. Fluoride (120 ppm), given in distilled drinking water without restriction
3. Fluoride (120 ppm/30 mg/kg body weight) and curcumin: An oral dose of curcumin dissolved in olive oil along with fluoride in drinking water
4. Curcumin (30 mg/kg body weight)

Turmeric's curcumin appears to spur production of glutathione, an antioxidant, in the brain.

STUDIOPHOTO/LOREZ/SHUTTERSTOCK

In order to ascertain the effect of treatment, the researchers measured the malondialdehyde (MDA) content in the brains of the differently treated mice. MDA is a well-known marker of oxidative

stress or damage. As was expected, the fluoride-only treatment group showed significantly elevated MDA levels compared with the nonfluoride-treated control group. The fluoride and curcumin group saw reduced MDA levels compared with the fluoride-only group, demonstrating curcumin's neuroprotective activity against fluoride-associated neurotoxicity.

"Our study thus demonstrate that [a] daily single dose of 120 ppm F result in highly significant increases in the [lipid peroxidation] as well as neurodegenerative changes in neuron cell bodies of selected hippocampal regions," the researchers reported.

"Supplementation with curcumin significantly reduce the toxic effect of F to near normal level by augmenting the antioxidant defense through its scavenging property and

provide an evidence of having therapeutic role against oxidative stress mediated neurodegeneration."

Sayer Ji is the author of the best-selling book "Regenerate" and founder and director of GreenMedInfo.com, the world's largest open-access natural health database. As a natural health rights advocate, Sayer co-founded Stand For Health Freedom, a nonprofit organization dedicated to protecting basic human, constitutional, and parental rights and recently launched Unite.Live, a worldwide platform for conscious content creators.

GROUND PICTURE/SHUTTERSTOCK



▲ Researchers have linked water-fluoridation to lower IQ scores but the practice of adding fluoride to community drinking water remains common in the United States.

1.5
to
13.3

percent of people may suffer microwave syndrome, according to surveys in various countries.



ALL PHOTOS BY GETTY IMAGES

NEXT WEEK

There is a key difference between natural EMFs and manmade wireless EMFs.



The strength and flexibility of your wrists are key to the functional movements of your hands.

Easy Exercises to Combat Chronic Pain

PART 10 | RESOLVING CHRONIC WRIST PAIN

Long-term wrist pain can often be relieved with these 6 simple exercises

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



Previous Parts:
TheEpochTimes.com/Chronic

By Kevin Shelley

"Your wrist shares a similar complexity with your ankles, and once pain syndromes start they can be difficult to eliminate," Rebecca Gold, an occupational therapist who has specialized in wrist and hand rehabilitation for the past 34 years, told The Epoch Times.

Compounding the problem, the wrists are in near-constant motion throughout the day, and the modern era tends to subject them to many repetitive motions, which can provoke chronic pain.

Consistent exercise can help decrease or eliminate chronic pain presentations in otherwise healthy wrists.

Causes of Chronic Pain in Healthy Wrists

Chronic pain is pain that lasts for more than three months. It may remain at low levels or can become worse over time. It isn't uncommon for chronic wrist pain to last for years.

Two common causes of wrist pain are decreased flexibility and muscle weakness.

Decreased Flexibility

"Your wrists are front and center for every functional task that you do with your hands," Ms. Gold said. "They simultaneously provide stability for the

hand and also the mobility needed to position your fingers during task performance."

Without the mobility of the wrist, the functional use of your fingers can be severely limited, especially if you have supination (turning of your arm so your palm faces up) and pronation (turning of your arm so your palm faces down) limitations.

Muscle Weakness

The three joints of the wrist rely on a balance of muscular strength to function optimally, and muscular imbalances can provoke 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.



Repetitive motions can take a toll on the wrists, which can lead to decreased flexibility and pain.

ICEO.ESPRESSO/SHUTTERSTOCK

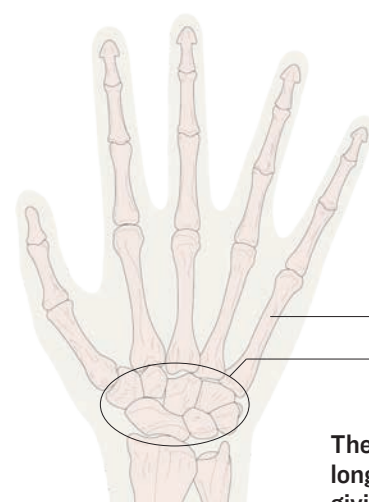
NEXT WEEK Our hands respond well to targeted exercises.

WRIST BONES AND MUSCLES

The wrist is composed of eight irregularly shaped small carpal bones that connect to the two forearm bones—the ulna and radius—via three joints. The carpal bones then connect to the five long metacarpal bones of the palm. This intricate structure allows for strength and flexibility of the hand through its wide array of movements. The primary muscles of the wrist and hand originate in the forearm. Muscles of the hand and wrist tend

to follow what's known as the rule of three: three muscles each for wrist flexion, wrist extension, finger flexion, finger extension, and thumb abduction.

This elegant, balanced design collectively provides strength and movement for the hands and fingers. These structures are further supported by an assortment of tendons, ligaments, and connective tissues that lend stability and flexibility to the wrist.



This elegant, balanced design collectively provides strength and movement for the hands and fingers.

- Metacarpal bones
- Carpal bones

The carpal bones connect to the five long metacarpal bones of the palm, giving the hand strength and flexibility.

A STEP BIOMED/SHUTTERSTOCK

EXERCISES FOR CHRONIC WRIST PAIN

The following exercises are a great way to start a safe, effective flexibility and strengthening regimen for the wrist, which can assist in reducing or eliminating pain.

1 WRIST SUPINATION AND PRONATION

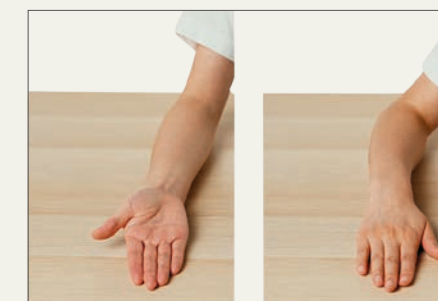
"Most individuals don't routinely move into full active supination and pronation, but it's an excellent and simple exercise to get in the habit of doing," Ms. Gold explained.

Step 1: Place your hand palm-down on a flat surface with your elbow by your side. Be sure to keep your hand as flat as possible.

Step 2: Keeping the pinky side of your hand in contact with the table, slowly turn your hand until your palm is all the way up. Keep your shoulders upright and don't lean into the movement. Hold for three seconds.

Try doing three sets of 15 repetitions, with movement in both directions counting as one repetition.

While performing this activity on a tabletop can help ensure movement accuracy, you can also perform it with your arms to your side and your elbows bent to 90 degrees. This can allow you to push your rotations even farther.



1

2 ACTIVE WRIST FLEXION

Wrist flexion is a critical aspect of hand function, especially when related to small item manipulation, and tight muscles and ligaments can inhibit wrist movement and daily activities. This simple exercise is easy to perform and can help maintain full wrist flexion.

Step 1: In a sitting position, place your elbow on a tabletop with your fingers pointing straight up toward the ceiling.

Step 2: Slowly bend your wrist while keeping your fingers straight, taking one second to move through your wrist's whole range of movement. Push firmly into the movement at the end, but avoid provoking pain, then move your hand straight back up with your fingers pointed toward the ceiling again.

Perform the exercise for three sets of 15 repetitions.

Don't underestimate the value of this exercise. Although simple to perform, it's excellent for maximizing and preserving wrist flexion.



2

3 WRIST EXTENSION

Wrist extension assists in plucking motions (e.g., guitar playing), stabilizing the wrist and strengthening your grip during pulling and pushing motions and positioning the wrist during typing and writing. Tight muscles and ligaments can inhibit wrist extension and functional capability.

Step 1: In a sitting or standing position place your fingers together and make them as straight as you can while extending your arm/hand straight out in front of you.

Step 2: Slowly extend your wrist up, taking one second to move through your wrist's whole range of movement. Once you reach the limit of your extension, push into the movement and hold for three seconds, then move your hand back to the starting position.

Perform three sets of 15 repetitions.



3

4 WRIST FISTED FLEXION

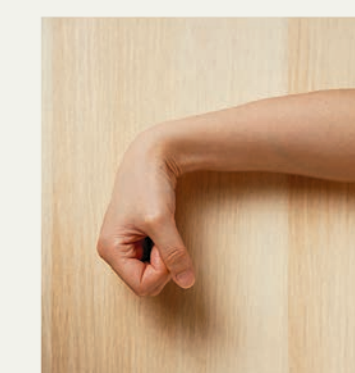
Performing wrist movements with a fisted hand can intensify the previous two exercises. They should be performed after loosening up with the first two wrist flexion and extension exercises.

Step 1: While sitting, place your elbow on a tabletop with your fingers pointing straight up toward the ceiling, then pull your hand into a loose fist.

Step 2: Slowly bend your wrist, taking one second to move through your wrist's whole range of movement. Push firmly into the movement while avoiding pain, hold for three seconds, then move your hand straight back up with your fingers pointed toward the ceiling.

Perform three sets of 15 repetitions.

Be sure to move carefully into this movement as it introduces increased tension across the tendons and ligaments along the palm side of your wrist.



4

5 WRIST FISTED EXTENSION

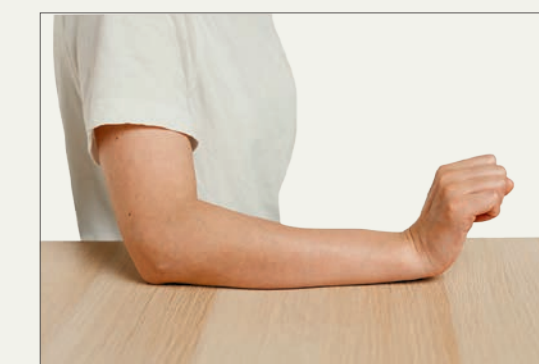
This exercise is easy to perform and can help build on the earlier extension exercise while increasing the intensity of the movement.

Step 1: In a sitting position, place your arm and hand on a tabletop, then make a loose fist.

Step 2: Slowly rotate your wrist upward, taking one second to move through your wrist's whole range of movement. Once you reach the limit of movement, push firmly and hold for three seconds, then move your hand back to the starting position.

Perform three sets of 15 repetitions.

This movement and fisted wrist flexion can be challenging for some people, so approach both of these exercises carefully at first and don't push into overt pain.



5

6 RADIAL/ULNAR DEVIATION

Radial/ulnar deviation refers to the movement of the wrist from side to side and tends to be one of the most neglected exercise movements. This exercise can help keep the joints and tendons associated with these movements flexible.

Step 1: While sitting, place your hand on a tabletop with your palm down, using the hand of your other arm to hold your wrist steady.

Step 2: Keeping your palm in contact with the table and your arm still, slide your fingers as far to one side as you can, hold for three seconds under full exertion, then move them as far as you can in the other direction and hold for three more seconds.

Perform three sets of 15 repetitions.

Be sure to maintain full resistance at the ends of both movements. These exercises can help maximize the flexibility and strength of the elbow muscles and ligaments, which can help decrease or eliminate chronic pain. If pain persists, however, seek medical consultation to get a proper diagnosis and treatment.



6

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

Could Dentists Help Stop Systemic Diseases?

Some argue that dentists need to play a larger role in disease prevention

Continued from Page 1

American Academy of Oral and Systemic Health (AAOSH)—is trying to raise awareness and unite the two fields for the benefit of patient health.

Missing From Mainstream

A shift in the oral microbiome and the host's inflammatory response are the primary contributors to gum disease, according to a 2010 review in *Periodontology* 2000. A common cause of tooth loss, periodontitis is a biofilm-associated inflammatory disease of the gum tissue that can be successfully treated, the research article said, by addressing the underlying microbial and immunological causes.

But oral microbiome testing is not a standard of care. Mainstream acceptance has been slow, in spite of what advocates say is

Medicine largely ignores what's happening inside the mouth, with the exception of trauma or focusing on one pathogenic invader.

overwhelming evidence of its role in oral and systemic diseases.

Some saliva tests not only show the makeup of the entire oral microbiome, but also examine the host response and detect oral cancer biomarkers. They can also pick up biomarkers for other cancers that have a unique oral microbiota signature. A study published this year in *Cancers* declared a link between colorectal cancer and the oral microbiome.

"Saliva gives as much information as blood. By taking salivary samples, in the very near future your dentist every six months could be looking at exactly what the body is producing," Dr. Mark Connon, a retired dentist, told *The Epoch Times*. "The issue is that insurance companies are not reimbursing for it."

The reason, he said, is that medi-

Functional dentists are unique because they typically conduct oral microbiome testing.



A Different Perspective

The article, published in 2018, warned against promoting oral health care strictly for its relationship to systemic health. Possible causal mechanisms were acknowledged, but Dr. Pihlstrom wrote that there is "no definitive evidence that treating oral disease will have any clinically meaningful effect on the prevention, treatment, or outcomes of any systemic disease."

The *Epoch Times* contacted JADA to ask whether

cal insurance says it should be a dental screening test, and dental insurance providers insist it's a medical test. As president of AAOSH, Dr. Connon is leading the organization's charge to redefine oral health to cease infighting to help doctors and dentists more easily collaborate on patient care.

Flawed Approach?

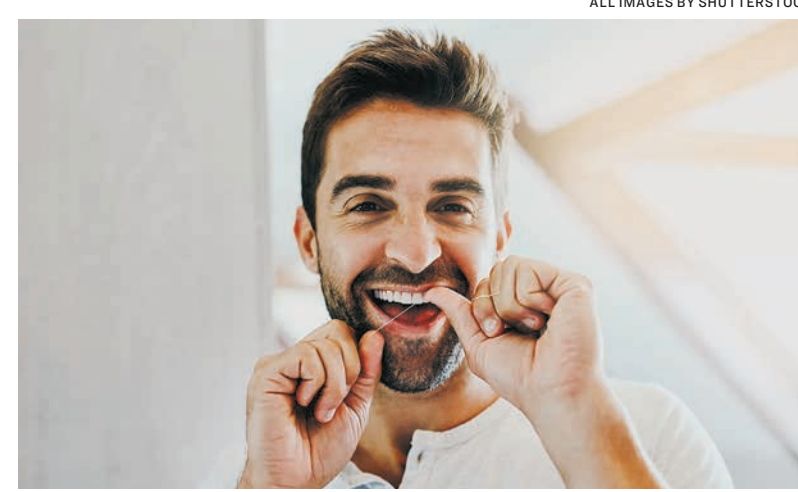
Oral microbiome testing seems far-fetched when many Americans aren't even getting necessary treatment for cavities and gum disease, which are both prevalent and preventable. That's because dental insurance coverage itself isn't widespread.

Only half of American adults ages 18 to 64 have private health coverage, according to the U.S. Centers for Disease Control. Among that group, 22 percent didn't see a dentist in the past year.

Oral disease pathology, however, appears to cross both disciplines, especially when it comes to diseases affected by the microbiome and systemic inflammation. A 2016 review article in the *Journal of Clinical Periodontology* reported links between periodontal disease and diseases such as diabetes, cardiovascular disease, preterm birth, rheumatoid arthritis, and liver diseases.

Medicine largely ignores what's happening inside the mouth, with the exception of trauma or focusing on one pathogenic invader. Dentistry tends to be more functional and aesthetic, as one *Journal of the American Dental Association* (JADA) editorial pointed out.

"Effective and efficient chewing, enjoyment of food, pleasing appearance, self-confidence, and freedom from pain and infection are just a few of the benefits of good oral health," the authors, one of whom is Dr. Bruce L. Pihlstrom, wrote. "Good oral health alone justifies preventing oral disease and maintaining oral health."



▲ While brushing and flossing or using an oral irrigator are important, experts say avoiding ultra-processed foods—and their effects on metabolic health and inflammation—are also critical to oral health.

it has updated its position on oral-systemic health.

The *Australian Dental Journal* agreed with the JADA article, referring to what it called poorly designed studies investigating trivial associations that raise false hopes among those with systemic conditions.

"We are a proud profession and we do not need to resort to gimmicks to promote our profession," Editor P. Mark Bartold wrote in the journal. "More recently, we have seen a change in focus towards understanding how oral infection and inflammation are bad and must be controlled in order to maintain high quality oral health. Surely this is a very noble goal and does not need to be embellished by sensationalist claims that are probably not true?"

Rarely does anyone dismiss that there is an oral-systemic connection, even if they don't agree on how to contextualize it. The *American Dental Association* notes the common risk factors between many diseases of the body and the mouth and a strong association between oral-systemic diseases, but it stops short of a causal relationship. Rather, it lists conditions that can affect oral health, including Alzheimer's disease, chronic kidney disease, sleep disorders, and diabetes.

Redefining Oral Health

AAOSH states that the mouth affects the whole body through breathing and airway issues, as well as the microbiome. "We are this crazy group of people that think health care should be integrated. We actually believe it's one body, that you can't just take it apart and treat things separately," Dr. Connon said sarcastically. Founded in 2010, AAOSH is ramping up efforts to educate in dental and medical schools, promote functional dentistry, and grow its membership.

"It's ridiculous how we treat oral health differently than systemic health. That schism is causing a lot of damage, a lot of death and suffering. It's so sad," functional dentist Dr. Mark Burhenne told *The Epoch Times*.

Dental groups often follow business models that base income projections on insurance plans and offer only services that are guaranteed reimbursements, such as filling cavities, X-rays, and cleanings.

facts on common digestive issues. Published in *Neuroendocrinology Letters* in 2013, it reported that the participants who were taking the remedy "revealed statistically significant improvements" of the symptoms "constipation" and "bloating."

Sleep

Papaya's high magnesium content has been linked to helping combat insomnia while also improving the quality and duration of sleep.

Skin

According to the Cleveland Clinic, the anti-aging nutrient retinol—a form of vitamin A—which is found in papaya, may help to improve skin elasticity and reduce the appearance of fine lines and wrinkles through its influence on collagen production. Applying papaya pulp directly to the skin has been used on burns and skin ulcers in remote rural hospitals to promote healing. Retinol is extensively used in the cosmetic industry.

Risks

Unripe papayas contain papaya latex. Pregnant women should avoid eating unripe green papayas as the latex in the juice may cause miscarriage by inducing uterine contractions. Unripe papayas also may cause a burning sensation on the skin, so those with a latex allergy should avoid eating them.

ALL IMAGES BY SHUTTERSTOCK

We have seen a change in focus towards understanding how oral infection and inflammation are bad and must be controlled in order to maintain high quality oral health.

P. Mark Bartold, editor, *Australian Dental Journal*

50

PERCENT

of American adults ages 18 to 64 don't have private health coverage.

A common cause of tooth loss, periodontitis is a biofilm-associated inflammatory disease of the gum tissue that can be successfully treated.

"That's a horrible model, because it never has any reason to address the root cause," Dr. Burhenne said.

Functional Dentistry

Lack of coverage hasn't stopped functional dentists who often operate on cash models. They not only conduct oral microbiome testing, but also adopt a whole-body approach to treatment. Their goal is to bring the body's entire microbiome into balance while lowering inflammation—and they encourage colleagues to join them.

"We are missing the mark not only to help patients get optimal oral health but to help their whole body health," Dr. Staci Whitman, pediatric dentist, told *The Epoch Times*. "We do need a mindset shift to change our practice models ultimately to help our patients achieve optimal health."

The oral cavity is the body's second-largest diverse community of microbes behind the gut, and everything that ends up in the gut must pass through the mouth.

"All the studies of the oral microbiome, whether good or bad, are linked to health disease throughout the body because the mouth is a gateway," Dr. Connon said. "The new axis of disease is the oral microbiome sets up the gut microbiome."

Neglecting to educate patients about the prevention of gum disease and cavities is ignoring the elephant in the room, according to Dr. Whitman, who said the root cause is often related to food—what, when, and how we eat.

Avoiding ultra-processed foods, eating more slowly and mindfully, and eating less frequently are as important as daily brushing and flossing, she said. Dr. Whitman also gathers information about her patients' metabolic health, inflammatory markers, blood sugar, vitamin D levels, and oral microbiomes.

"We really want to look bigger picture, the whole body, the whole patient, not just the mouth and teeth," she said. "We're really trying to get patients back to optimal health, to prevent issues from happening again and teach patients and motivate them with coaching and emotional support."

Education and Collaboration

Dr. Connor, who's a professor at Northwestern University Feinberg School of Medicine, said the oral-systemic health movement is growing. AAOSH offers continuing education training on the latest research online and at annual conferences.

Some are personally trying to bridge the professional gap. Dr. Craig Backs, internist and founder of the Cure Center for Chronic Disease, developed an app for his patients and invites their dentists to access it, too. The app is used to set and monitor health goals related to lowering risk factors, upload test results, and stay mutually motivated.

Dr. Burhenne has compiled an online listing of functional dentists who have integrative or functional training. He said

lack of patient knowledge and insurance coverage are barriers for the growth of oral-systemic care.

"Educate yourself as a patient. Don't trust your dentist. They're good people, but they've been indoctrinated. They have a certain way of dealing with your health issues. They wait until you have bleeding gums," he said. "A functional dentist will treat you in your prodromal phase, in other words before you get bleeding gums or cavities ... so you never get the disease."

BLEEDING GUMS ARE NOT NORMAL

Bleeding gums aren't only a sign of inflammation but also an opportunity for problematic bacteria to become a hitchhiker on red blood cells.

This is the mechanism of action linking the oral microbiome to systemic disease, Dr. Ellie Campbell, an integrative primary care specialist, told *The Epoch Times*. Gum tissue is vascular, and oral microbes can invade the body.

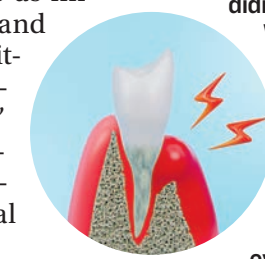
"Normal brushing or flossing should never cause bleeding," she said. "The problem is too many dentists tolerate it. They look at your gums and they say, 'You have good gums. You don't have deep pockets or active bleeding.' But they didn't do the bacteria test. Whole bacteria get in the bloodstream, and they can travel anywhere."

Bleeding gums should automatically warrant oral microbiome tests, Campbell said. Although everyone has some bad bacteria in their mouths, a healthy community of commensal microbes will prevent them from becoming pathogenic, or disease-causing.

In a disease state, pathogenic species begin to stick to the mucosa, where they breach the barrier of the commensals and cause infection. The makeup of the microbial community can also perform anti-inflammatory functions, or—if out of balance—contribute to inflammation, according to a 2021 article in *Periodontology* 2000.

But much of what's happening in the oral microbiome is quiet. Campbell said a normal pathogenic level is 5 percent, but by the time there are disease symptoms, it's risen to about 48 percent.

"That's part of the sneaky thing. Somewhere along the continuum, you had an escalating number of bad bacteria but no symptoms yet. That's where we can intervene," she said. "It's a simple spit test that's under \$100."



Papaya Does a Body Good

This tropical fruit offers great nutrition with therapeutic effects

By Sandra Cesca

Papaya (*Carica papaya*)—also known as pawpaw—is native to Mexico and dates back more than 1,000 years. The many varieties of papaya range in weight from half a pound to an astounding 22 pounds of delicious goodness.

Although many people discard papaya's tiny black seeds, they're highly nutritious and safe to eat. They have a crunchy texture and a slightly peppery flavor. When roasted, the seeds can be ground in a pepper mill and used as a black pepper substitute.

Like many tropical fruits, papaya's range of nutrients includes vitamins A, B, and C, potassium, magnesium, fiber, folic acid, and small amounts of calcium and iron. The fruit also has therapeutic properties.

Ayurvedic and traditional Chinese medicines incorporate all parts of the papaya for various medicinal remedies. For example, an extract of the peel is used for anti-malarial treatments, especially in tropical countries where papayas are grown. Papaya seeds have been used to detoxify the liver, remove intestinal parasites, and

relieve itching from mosquito bites.

Benefits

The bioactive compounds in papaya show numerous health-promoting properties, including anticancer, anti-inflammatory, antioxidant, antibacterial, and antifungal properties. In particular, the antioxidant carotenoid beta carotene—which gives papaya its color—is a precursor to vitamin A. This essential vitamin protects the body from free radicals, thus helping to lower the risk of developing cancer and heart disease.

Heart

The antioxidants in papaya prevent cholesterol oxidation, which can create blockages that lead to heart disease. Papaya also contains folic acid, which is essential for converting the amino acid homocysteine into less harmful amino acids, thus helping to reduce heart disease.

Eyes

Zeaxanthin, another papaya antioxidant, is used in the macula and retina of the eye.

Ayurvedic and traditional Chinese medicines incorporate all parts of the papaya for various medicinal remedies.



▲ The bioactive compounds in papaya have anticancer, anti-inflammatory, and antioxidant properties.

It's thought to function as a filter for harmful UV rays. A study, published in *Foods* in 2017, looked at the effects of supplementation with lutein, zeaxanthin, and meso-zeaxanthin in protecting the eye from the blue light emitted by computer screens. This study found that supplementation yielded significant improvement in "overall sleep quality, headache frequency, eye strain, eye fatigue, and all visual performance measures."

Cancer

The pulp and seeds of papayas are a good source of the carotenoid lycopene. Studies have shown that lycopene may reduce the risk of some cancers, such as prostate, colorectal, cervical, and breast cancers.

Brain

Lycopene studies also have shown anti-aging protection for the brain, as the compound inhibits oxidative stress and inflammation, thus lowering the risk of neurodegenerative disorders such as Alzheimer's disease, dementia, and Parkinson's disease.

Digestion

Historically, the fruit's juice has been used in remedies for indigestion, sore throat, inflammation, swelling, infections, and allergies.

A randomized controlled trial tested a treatment made from papaya for its ef-

Overeating papaya seeds may cause gastritis because of their benzyol glucosinolate content, according to a study published in the *Asian Pacific Journal of Tropical Medicine* in 2012.

Too much papaya may have a laxative effect, causing diarrhea and an upset stomach.

Tips for Eating Papayas

- Green unripe papayas won't have the characteristic flavor or texture of ripe ones. Ripe papayas have deep orange or yellow skin. The taste is best when

the skin is soft to the touch.

- To serve, cut in half along the length of the fruit, scoop out the seeds, and spoon out the orange pulp. Alternately, the fruit can be peeled and sliced. Some like to squeeze a bit of lime juice over the fruit. Save the seeds if you want to eat or dry them later.

- Try cutting the papaya in half and removing the seeds, then filling the seed cavity with yogurt—a delicious and aesthetically

pleasing presentation!

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

Nutritional Qualities

According to USDA Food Data, 2019, one cup of cut papaya pulp contains about:

- 43 calories
- 0.47 grams protein
- 11 grams carbohydrates
- 0.3 grams fat
- 1.7 grams fiber
- 7.8 grams sugar
- 61 milligrams vitamin C
- 21 milligrams magnesium
- 182 milligrams potassium
- 1830 micrograms lycopene
- 274 micrograms beta carotene
- 37 micrograms folate
- 950 IU vitamin A



▲ Papaya are a good source of the lycopene, a pigment known as a carotenoid that researchers have found can offer anti-aging protection for the brain by lowering oxidative stress and inflammation

PREPARING FOR A GOOD END

PART 3 DYING WELL IS A RELATIONAL JOURNEY

Advance directives can't replace conversations with loved ones and health care providers, but they're one practical step toward dying well.

By Sharleen Lucas

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



Previous Parts:
TheEpochTimes.com/Good End

Repeated talks as medical conditions progress prepare you and your loved ones to make urgent and stressful decisions if your health worsens quickly.



HANAFI SALEHUDDIN/SHUTTERSTOCK

Since the early 1990s, when Congress mandated the Patient Self-Determination Act of 1991, health care systems, nonprofits, and state governments have spent millions to generate initiatives and documents to help people express their end-of-life treatment goals. The purpose of advance directives—one's legal end-of-life documents—is to ensure that patients with serious and terminal conditions receive medical care that matches their stated wishes—something health care professionals call “goal-concordant care.”

Most palliative care experts urge their friends, family, and patients to complete advance directives. Yet others point out that after 30 years of campaigns persuading people to write their living wills, more than 65 percent of adults still haven't completed the documents and that research struggles to reveal a compelling reason to do so.

A 2018 review published in the *Journal of Pain and Symptom Management* raises concerning questions about whether 30 years of funding for advance care planning initiatives has been well spent.

Advance Directives Aren't a Panacea

In its simple intent to help people complete their end-of-life paperwork before they're seriously ill, advance care planning seems like a clear process. However, as the 2018 review exposed, when bureaucratic and cumbersome health care systems mix with complex human and medical issues, the clarity is quickly muddled.

In essence, death haunts humans. Completing paperwork in advance of the inevitable feels daunting and

unnecessary when you're busy living a healthy life.

What's more, many palliative care providers lament that doctors don't have the time and training to be bothered with death. Physicians are wired to save lives and cure illnesses, not walk with patients through their dying journey.

And how can advance paperwork foresee all possible complexities to one's future medical conditions? Combine this challenge with a confusing health care system buried in electronic and paper documents, and it isn't surprising we're behind on the government's 1991 mandate.

Astonishingly—after 30 years of work—patients, nurses, and palliative care providers continue to lament that many health care providers, from first responders to physicians, dismiss advance directives and living wills or apathetically neglect to locate them.

Apparently, our advance care planning (ACP) initiatives aren't working.

What's the Answer?

Most palliative care experts aren't ready to trash ACP altogether. They argue that it isn't the paperwork that increases a patient's likelihood of receiving the care they want at the end of life. Instead, honest and ongoing conversations with loved ones and health care providers empower advance directives.

Without the conversations, documents are emotionally detached papers filed in an easily forgotten black hole.

“People who feel confident about what they think their family member would want are the ones who can recall the conversation,” said Lisa Pahl, a veteran hospice social worker. “They don't remember Mom's checklist on the advance directive ... They remember what Mom said.”

As a co-founder of The Death Deck, an end-of-life conversation tool, Ms. Pahl fiercely advocates for early, honest, and ongoing talks about one's dying wishes.

She told The Epoch Times that it fills her with “joy” to walk into a room of a dying patient and loved ones who are prepared.

“The grieving process is exponentially smoother when people have already done the work,” she said.

“I do think that the preparation is one of the key pieces [to dying well], because it affects everything.”

In the end, the authors of the provocative 2018 analysis agree. The 1,600 studies they reviewed had inconsistent outcomes and varied methods. Still, they identified “recurrent features” causing some ACP programs to be more effective.



Writing advanced directives is best done while you're still healthy.

People who feel confident about what they think their family member would want are the ones who can recall the conversation.

Lisa Pahl, social worker

One such feature is continual and joint discussion in which everyone involved in the patient's dying journey is included, from physicians and nurses to loved ones and surrogate decision-makers. Since the human element may be the most potent determinant of concordant care, involving a patient's entire support team in the conversation appears to lead to success in eventually honoring the patient's wishes.

Studies and experts suggest that a relational process of advance care planning is best—one that doesn't focus on the single task of written documents but on bringing the individual players together in ongoing, personal talks.

The power of written documents surfaces when they're bundled with intimate human relationships and conversations.

How to Start Your Advance Care Planning

1. Start the conversation with loved ones, no matter how young you are and how difficult it is.
2. Choose a health proxy, your medical power of attorney, to make treatment decisions if you can't speak for yourself. Appoint someone who can handle the weight when the going gets tough. Sometimes the best person isn't a family member.
3. Research your state's legal end-of-life documents. If you're healthy, complete advance directives with general instructions for your medical treatment if you become incoherent. If you are diagnosed with a serious

illness, early talks and in-the-moment, detailed updates to your paperwork become essential in finding peace and appropriate care along the journey.

4. Seek a palliative care specialist to work with your disease specialist if you are diagnosed with a serious condition such as cancer or organ failure, whether you have days to live or years. Multiple studies reveal that having a palliative care specialist on your support team helps you make a plan and live better for longer.

5. Make copies of your end-of-life instructions for your loved ones, health proxy, primary care provider, and palliative care specialists. If your

end-of-life wishes become more urgent, post your directives in an easy-to-find location where first responders can find them.

6. Keep the conversation going. Repeated talks as medical conditions progress prepare you and your loved ones to make urgent and stressful decisions if your health worsens quickly.

Ultimately, we won't salvage the art of dying well through policies and health care initiatives. The hope lies in relationships with loved ones, health care providers, local communities, social groups, and faith organizations.

As palliative care physician Steven Pantilat writes in his book “Life After the Diagnosis,” “Planning won't change the reality of your diagnosis, but it can change how you, your friends, and your family feel about and deal with your illness.”

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 Knowing how the body dies can ease your final days.

Eat Anti-Cancer Foods to Repair Your DNA

Your DNA is under constant assault, so help your body repair itself and reduce your risk of cancer

By Flora Zhao

Many of our physiological processes are orchestrated according to an instruction manual—our cellular DNA. However, DNA is susceptible to damage, which can accelerate aging and result in diseases such as cancer. So how can we prevent, mitigate, or even repair DNA damage?

If you were to unwind human DNA, it would be approximately two meters long; it's structured like a long, twisted ladder, about 10 micrometers in diameter, and coiled within cells' nuclei.

DNA carries the instructions necessary for human development, survival, and reproduction. Our cells read these instructions to produce various proteins essential for life processes. For example, DNA serves as a guide for cells to produce various hormones, including insulin.

DNA is actually quite fragile. Even though it resides within the cell nucleus, it's constantly exposed to threats and susceptible to damage.

“DNA damage is a constant occurrence in the body of a healthy individual,” professor Qing-Bin Lu from the departments of Physics and Astronomy, Chemistry, and Biology at the University of Waterloo in Canada, told The Epoch Times.

Damage From the External Environment

Ultraviolet radiation, ionizing radiation, chemical toxins, air pollution, and tobacco smoke, among other factors, can cause DNA damage.

“When the DNA is damaged, the instructions can be corrupted, and the proteins that are made can be abnormal, or not made at all,” Dr. William Li, president and medical director of the Angiogenesis Foundation and bestselling author of “Eat to Beat Disease: The New Science of How Your Body Can Heal Itself,” told The Epoch Times.

“This DNA damage is the basis for mutations in our cells that can ultimately lead to cancers forming in our organs. This is why repeated sunburn, or chemical exposure, or cigarette smoking, for example, often leads to cancer.” Mr. Lu echoed some of

those points, noting that man-made radiation and naturally occurring cosmic radiation, which we are protected from by the Earth's atmosphere, can also contribute to cancer.

“Sudden exposure to a high dose of radiation over a short period of time results in significant genetic mutations and cell death in the body. This is why astronauts face a much higher risk of developing cancer compared to the general population. This increased risk may also be observed in the case of Madame Curie, who died from cancer due to her extensive exposure to radiation in her work,” he said.

The body is well-prepared to repair the constant DNA damage it suffers—if it has the right nutrients.



FCAPFOTODIGITAL/GETTY IMAGES

Damage From Within the Cell

In addition to the damage from the external environment, DNA faces various threats from within the cells.

Metabolism converts nutrients into energy and vital substances to sustain life, but other byproducts, such as reactive oxygen species (ROS), are also generated during this process.

“ROS are classified as free radicals, and they are not a single substance but rather a category of substances,” Mr. Lu said.

“These ROS are highly unstable and can cause DNA damage. It's estimated that each of our cells experiences tens of thousands of such damaging events daily. Oxidative damage from ROS accounts for a significant portion of all DNA damage.”

“Think of DNA as a ball of yarn in which the fibers are perfectly twisted together,” Dr. Li said. “Think of free radicals and ROS like metal pins that can snag, pull, and cut the yarn so the fibers are broken and untwisted.”

The damage to DNA from within the cells is significant. In fact, in many human tissues or animal models of carcinogenesis, the levels of oxidative DNA damage exceed those caused by exposure to exogenous carcinogenic compounds.

Innate DNA Repair Mechanisms in the Human Body

But there's no need to be overly worried. “There are repair mechanisms in our bodies, so generally, there are no issues,”

Mr. Lu said. “Within the cells, specific enzymes continuously monitor and assess the condition of DNA. If any damage is detected, they will recruit specific proteins to repair the DNA.”

“Our DNA is hardwired to defend and protect itself,” Dr. Li wrote in his book. Enzymes in the cells act like scissors, trimming off the damaged sections of DNA and replacing them with the correct structure and sequence.

A recent study also discovered that when human cells encounter DNA damage induced by chemical substances, the cells instruct an antioxidant enzyme to enter the nucleus and eliminate ROS, thereby preventing further DNA damage.

Why ROS Are Important for Health

Dr. Li and Mr. Lu emphasized a crucial point during their interviews—the ROS that can damage DNA are actually essential substances for human health.

Mr. Lu said that it's a significant misconception that ROS and free radicals are entirely harmful substances.

Although they can cause damage, ROS are also essential for the human body and are crucial in maintaining cellular and physiological functions. For example, they aid in clearing cellular debris within the body.

Hydrogen peroxide (H₂O₂) is an ROS produced during cellular respiration, but it serves as a vital signaling molecule, playing a significant role in the body's immune defense. Another ROS, nitric oxide (NO), is well known for its physiological functions in expanding blood vessels and increasing blood flow. It also acts as a signaling molecule and contributes to the body's innate immune defense in conjunction with hydrogen peroxide.

Additionally, our bodies can produce

a variety of antioxidant enzymes, which help maintain a balance with ROS.

“Without any free radicals or ROS, you would not survive,” Dr. Li said. “The problem is when they are in excess.”

Nutrients Can Help Protect DNA

As we age, the antioxidant capacity of cells may decline. In certain disease conditions, such as infections and inflammation, the increase in the production of ROS and other oxidants may surpass the antioxidant capacity, leading to a state known as oxidative stress.

A diet rich in antioxidants can help neutralize free radicals in the body and counteract the oxidative stress on DNA induced by ROS.

This condition can be exacerbated by factors such as air pollution, chemicals, highly processed foods, high-fat diets, stress, tobacco smoke, and alcohol.

A diet rich in antioxidants can help neutralize free radicals in the body and counteract the oxidative stress on DNA induced by ROS.

“The effect of these bioactives is to neutralize the free radicals, so they are no longer able to damage DNA and cells. This function of neutralizing free radicals is known as antioxidant,” Dr. Li said. These compounds form a line of defense against oxidative damage.

In 2006, German researchers published a study in the *Biotechnology Journal* in which one group of participants consumed 700 milliliters of red berry juice rich

in polyphenols daily. Meanwhile, another group served as the control and drank polyphenol-depleted juice. The study showed that consuming polyphenol-rich juice led to a reduction in oxidative DNA damage and an increase in antioxidant capacity within the body. The control group didn't exhibit such responses.

In a randomized crossover study, Norwegian researchers demonstrated the protective and reparative effects on DNA of consuming kiwifruit. Daily kiwifruit intake for three consecutive weeks reduced oxidative damage in lymphocytes and enhanced DNA repair.

Italian scientists also confirmed that young smokers who consume 250 grams of steamed broccoli daily for 10 consecutive days experienced a 41 percent reduction in oxidative damage to cell DNA and a 23 percent increase in antioxidant capacity.

Vitamins A, C, and E

These vitamins are antioxidants that can eliminate free radicals within cells, preventing or reducing damage caused by oxidation. They are abundantly found in various fruits and vegetables.

Lycopene

Red-colored fruits and vegetables such as tomatoes, apricots, pink grapefruits, and watermelons are rich in the antioxidant lycopene.

Flavonoids

Apples, grapes, citrus fruits, berries, onions, olive oil, and tea are rich in flavonoids, which exhibit antioxidant effects.

In his book, Dr. Li also highlights that berry juice, kiwifruit, carrots, broccoli, seafood, and lycopene-rich foods have been proven to aid DNA repair in clinical trials.



FIND A CHALLENGE
Cognitively demanding activities that require your undivided attention can help keep you sharp.

AGE WELL

5 Tricks to Improve Your Memory

Maintain sharp memory in old age by giving your brain what it needs to stay healthy

By Joseph Mercola

It was once believed that brain function peaked during early adulthood and then slowly declined, leading to lapses in memory and brain fog during your golden years. Now it's known that our modern lifestyle plays a significant role in contributing to cognitive decline, which is why exposure to toxins, chemicals, poor diet, lack of sleep, stress, and much more can hinder the functioning of your brain.

The flip side is also true in that a healthy lifestyle can support your brain health—and even encourage your brain to grow new neurons, a process known as neurogenesis.

Your brain's hippocampus—the

memory center—is especially able to grow new cells. It's now known that your hippocampus regenerates throughout your entire lifetime, even into your 90s, provided you give it the tools to do so.

These "tools" are primarily lifestyle-based, which is wonderful news. You don't need an expensive prescription medication or any medical procedure at all to boost your brain and your memory. Beyond eating a healthy, nutrient-dense diet with healthy fats—and avoiding processed foods and added sugars—try the following tricks to improve your memory.

5 Lifestyle-Based Ways to Improve Your Memory

1 Exercise

Exercise encourages your brain to work at optimum capacity by stimulating nerve cells to multiply, strengthening their interconnections, and protecting them from damage.

During exercise, nerve cells release proteins known as neurotrophic factors. One in particular called brain-derived neurotrophic factor (BDNF), triggers numerous other chemicals that promote neural health and directly benefit cognitive functions, including learning.

A 2010 study on primates published in *Neuroscience* revealed that regular exercise not only improved blood flow to the brain but also helped the monkeys learn new tasks twice as quickly as non-exercising monkeys. This is a benefit the researchers believe would hold true for people as well. Exercise improves both brain structure and function, with research showing it significantly increases hippocampal volume in older adults with probable mild cognitive impairment. To get the most out of your workouts, I recommend a comprehensive program that includes high-intensity exercise, strength training, stretching, and core work, along with

plenty of daily non-exercise movement.

2 Stop Multitasking

Used for decades to describe the parallel processing abilities of computers, multitasking is now shorthand for the human attempt to simultaneously do as many things as possible, as quickly as possible. Ultimately, multitasking may slow you down, make you prone to errors, and make you forgetful.

The opposite of multitasking is mindfulness, which helps you achieve undistracted focus. In a randomized clinical trial, students who took a mindfulness class improved reading comprehension test scores and working memory capacity, as well as experienced fewer distracting thoughts, according to the study, published in *Psychological Science* in 2013.

If you find yourself trying to complete five tasks at once, stop yourself and focus your attention back to the task at hand. If distracting thoughts enter your head,

remind yourself that these are only "projections," not reality, and allow them to pass by without stressing you out.

You can then end your day with a 10- or 15-minute meditation session to help stop your mind from wandering and relax into a restful sleep.

3 Get a Good Night's Sleep

Research from Harvard indicates that people are 33 percent more likely to infer connections among distantly related ideas after sleeping, but few realize that their performance has actually improved.

Sleep is also known to enhance your memory and help you "practice" and improve your performance of challenging skills.

The process of brain growth, or neuroplasticity, is believed to underlie your brain's capacity to control behavior, including learning and memory.

Plasticity occurs when neurons are stimulated by events, or information, from the environment. However, sleep and sleep loss modify the expression of several genes and gene products that may be important for synaptic plasticity.

Furthermore, certain forms of long-term potentiation, a neural process associated with the laying down of

learning and memory, can be elicited in sleep, suggesting synaptic connections are strengthened while you slumber.

As you might suspect, this holds true for infants, too, and research shows naps can give a boost to babies' brainpower. Specifically, infants who slept in between learning and testing sessions had a better ability to recognize patterns in new information, which signals an important change in memory that plays an essential role in cognitive development, according to research published in *Psychological Science* in 2006.

There's reason to believe this holds true for adults, too, as even among adults, a mid-day nap was found to dramatically boost and restore brainpower.

4 Master a New Skill

Engaging in "purposeful and meaningful activities" stimulates your neurological system, counters the effects of stress-related diseases, reduces the risk of dementia, and enhances health and well-being, according to research published in *Occupational Therapy International* in 2007.

A key factor necessary for improving your brain function or reversing functional decline is the seriousness of the purpose with which you engage in a task. In other words, the task must be important to you, or somehow meaningful or interesting. It must hold your attention.

For instance, one 2011 study published in *The Journal of Neuropsychiatry and Clinical Neurosciences* revealed that craft activities such as quilting and knitting were associated with decreased odds of having mild cognitive impairment.

Another 2014 study found that taking part in cognitively demanding activities like learning to quilt or digital photography enhanced memory function in older adults. The key is to find an activity that is mentally stimulating for you. Ideally, this should be something that requires your undivided attention and gives you great satisfaction, an activity you look forward to doing, such as playing a musical instrument, gardening, building model ships, crafting, or many others.

5 Try Mnemonic Devices

Mnemonic devices are memory tools to help you remember words, information, or concepts. They help you to organize information into an easier-to-remember format. Try:

- Acronyms, such as PUG for "pick up grapes."
- Visualizations, such as imagining a tooth to remember your dental appointment.
- Rhymes—If you need to remember a name, for instance, think "Shirley's hair is curly."
- Chunking, which is breaking up information into smaller "chunks," such as organizing numbers into the format of a phone number.

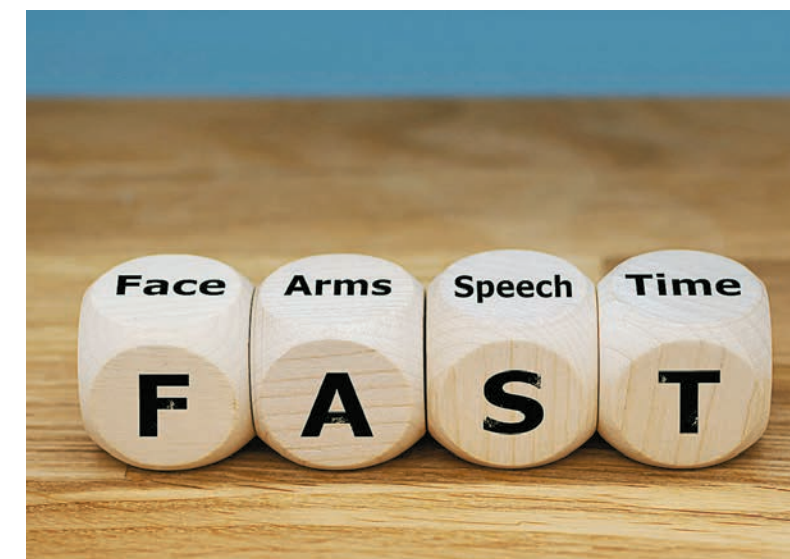
Dr. Joseph Mercola is the founder of Mercola.com. An osteopathic physician, best-selling author, and recipient of multiple awards in the field of natural health, his primary vision is to change the modern health paradigm by providing people with a valuable resource to help them take control of their health.



▲ Engaging in meaningful or interesting tasks that hold your attention—and you care about—is key to improving brain function.



▲ Sleep is key to brain health and can stimulate processes that store learning and memory from the day before.



▲ Mnemonic devices, like this one for the signs of stroke, can be used as memory tools to help you remember important information.



▲ Exercise has been shown to increase the size of the brain's hippocampus in older adults who seemed to have mild cognitive impairment.

MORE SMART TIPS FOR BRAINPOWER

If you're serious about improving your memory and your cognitive function, you'll also want to know about these three important variables for brain health.

Vitamin D

Activated vitamin D receptors increase nerve growth in your brain, and researchers have also located metabolic pathways for vitamin D in the hippocampus and cerebellum of the brain, areas that are involved in planning, processing of information, and the formation of new memories.

Vitamin D increases nerve growth factor, which promotes brain health, while low vitamin D is associated with cognitive impairment and dementia.

Appropriate sun exposure is all

it takes to keep your levels where they need to be for healthy brain function. If this isn't an option, a vitamin D3 supplement may be necessary.

Time-Restricted Eating

Time-restricted eating (TRE) is another powerful intervention. It mimics the eating habits of our ancestors and restores your body to a more natural state that allows a whole host of metabolic benefits to occur.

TRE involves limiting your eating window to six to eight hours per day instead of the more than 12-hour window most people use. Ideally, you'll want to stop eating for several hours before bedtime, then start your eating window in mid to late morning after you wake up.

TRE may improve cognitive function and protect against neurological diseases such as Alzheimer's disease, according to a 2007 study published in *Neurobiology of Disease*. The ef-

fect is thanks to the production of ketone bodies and BDNF, which activates brain stem cells to convert into new neurons and triggers numerous other chemicals that promote neural health.

Gut Health

Your gut is your "second brain," and your gut bacteria transmit information to your brain via the vagus nerve, the 10th cranial nerve that runs from your brain stem into your enteric nervous system (the nervous system of your gastrointestinal tract).

There is a close connection between abnormal gut flora and abnormal brain development, and just as you have neurons in your brain, you also have neurons in your gut—including neurons that produce neurotransmitters like serotonin, which is also found in your brain and is linked to mood.

Quite simply, your gut health can impact your brain function, psyche,

and behavior, as they are interconnected and interdependent in a number of different ways.

In addition to avoiding sugar, one of the best ways to support gut health is to consume beneficial bacteria. You can use a probiotic supplement for

In addition to avoiding sugar, one of the best ways to support gut health is to consume beneficial bacteria.

The Choline-Brain Connection

Choline is an essential nutrient your body makes in small amounts. However, you must consume it through your diet to get enough.

In adults, choline helps keep your cell membranes functioning properly, plays a role in nerve communi-

cations, prevents the buildup of homocysteine in your blood (elevated levels are linked to heart disease), and reduces chronic inflammation.

In pregnant women, choline plays an equally, if not more, important role, helping to prevent certain birth defects, such as spina bifida, and playing a role in brain development.

Prior research has concluded that choline intake during pregnancy "supercharged" the brain activity of animals

in utero, indicating that it may boost cognitive function, improve learning and memory, and even diminish age-related memory decline and the brain's vulnerability to toxins during childhood, as well as conferring protection later in life.

If you're pregnant, making sure your

diet includes plenty of choline-rich foods is important, as research shows higher choline intake led to changes in epigenetic markers in the fetus, according to the results of a randomized controlled trial published in the journal of the Federation of American Societies for Experimental Biology.

Specifically, it affected markers that regulate the hypothalamic-pituitary-adrenal (HPA) axis, which controls hormone production and activity. The changes in fetal genetic expression will likely continue into adulthood, where they play a role in disease prevention.

According to a study published in the journal *Nutrients*, only 8 percent of U.S. adults are getting enough choline (including only 8.5 percent of pregnant women).

Krill oil is a simple solution, which can boost choline levels after a single dose. Aside from krill oil, eggs—particularly the yolks—are another excellent choline source.



▲ Animal studies found taking choline during pregnancy boosted cognitive function.

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Iodine is present in every cell of our bodies and has antibacterial, antiviral, anti-parasitic, and anti-cancer properties.

Iodine Deficiency Linked to Cancer and Thyroid Disease

Widespread iodine deficiency is affecting millions of people in the United States, says Dr. David Brownstein

By Christy Prais

Although it's well established that iodine is necessary for thyroid hormone production, its therapeutic benefits extend far beyond that. Iodine is present in every cell of our bodies and has antibacterial, antiviral, anti-parasitic, and anti-cancer properties and is required for proper immune function. It's also vital for the normal architecture of essential glandular tissues such as the breasts, ovaries, uterus, pancreas, and prostate. Testing for and treating iodine deficiency should, therefore, be a top priority to avoid serious complications, according to Dr. David Brownstein, a family physician and the medical director of the Center for Holistic Medicine in West Bloomfield, Michigan.

Why We Need Adequate Iodine for Thyroid Health

"If you don't have enough iodine, you can't produce vital hormones the body needs, so having an iodine deficiency can lead to a diagnosis of hypothyroidism," Dr. Brownstein said in a recent interview on Discovering True Health, a YouTube channel and podcast dedicated to health and wellness. Iodine is essential for making thyroid hormones triiodothyronine and thyroxine, which are especially important in pregnancy and infancy for the proper development of a baby's brain and bones. The two hormones also help control body temperature, heart rate, and digestion and maintain healthy skin, hair, and nails. Over time, hypothyroidism also increases the risks of heart disease, high cholesterol, and diabetes.

35 to 45 PERCENT of people worldwide are affected by iodine deficiency.

The thyroid requires a daily supply of iodine to manufacture sufficient hormones. It needs to capture about 60 micrograms of iodine from the bloodstream each day, according to a paper published in Sultan Qaboos University Medical Journal. If iodine levels are low, the thyroid enlarges to try to absorb more iodine. This compensatory swelling is called a goiter.

How Iodine Deficiency May Lead to Cancer

Studies on rats from decades ago revealed that iodine deficiency produced precancerous conditions, according to Dr. Brownstein. Iodine also has been found to have anti-cancer effects in laboratory studies using human cancer cells.

Continued on Page 14



Infrared Light for Pain, Inflammation, and Accelerated Healing

New research and devices open up new therapeutic applications of this century-old treatment

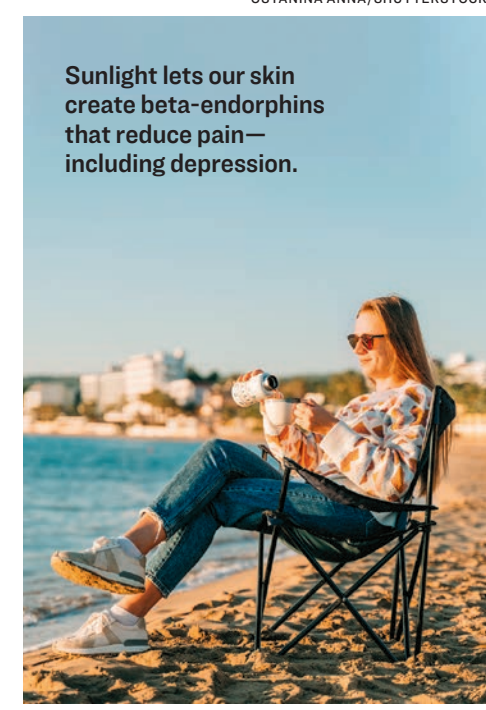
By Emma Suttie

It isn't so hard to understand the healing power of light when we think about its most abundant source—the sun. Without the sun, virtually every living thing on this planet would perish. The sun's nourishing rays offer several health benefits. Our bodies need sunlight to make vitamin D3, which

is vital for supporting the immune system and reducing inflammation. Exposure to the sun's UVB rays also allows our skin to create beta-endorphins that reduce pain, help heal wounds, boost the immune system, and relieve symptoms of depression. Using light as a healing therapy dates back to 1903, when Niels Ryberg Finsen won a Nobel Prize in physiology in "recognition of his contribution to the treatment of diseases, especially lupus vulgaris, with concentrated light radiation, whereby he has opened a new avenue for medical science." His work substantially affected medicine, and light therapy has been used ever since. The discovery of lasers in the 1960s represented a new way to use light to promote healing. A report published in the Annals of Biomedical Engineering in 2012 states that red low-level laser light

is used predominantly in three ways: "to reduce inflammation, edema, and chronic joint disorders; to promote healing of wounds, deeper tissues, and nerves; and to treat neurological disorders and pain." There are many names for light therapy and many different types of light therapy, including low-level light therapy, light box therapy, biostimulation, phototherapy, cold laser therapy, and photonic stimulation. The name most often used in the scientific community is photobiomodulation, or PBM. Photobiomodulation involves using red or near-infrared light at low power densities to benefit cells or tissues. According to an article published in Photochemistry and Photobiology, PBM therapy is used to reduce pain, inflammation, and swelling

Continued on Page 16



Sunlight lets our skin create beta-endorphins that reduce pain—including depression.

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Iodine Deficiency

Continued from Page 13

Iodine is thought to be one of the oldest antioxidants in living organisms, according to a 2021 review published in the *Nutrients* journal. One of iodine's roles is scavenging reactive oxygen species. It interacts with and neutralizes these potentially damaging molecules, reducing their harmful effects on cells and tissues, thus reducing the risk of cancer.

Also, a 2017 review published in the *Journals of Nutritional Health & Food Sciences* found that "iodine deficiency is linked to ovarian cysts that hinder fertility and increase the risk of ovarian cancer. Iodine deficiency further can develop nodules and form fibrosis that can progress to cancer of thyroid, uterus, and breast cancer." "The reason we're seeing such a rise in glandular cancer, including cancer of the breast, thyroid, and prostate, is... in part... this iodine deficiency that has taken hold of our country," Dr. Brownstein said.

Breast Cancer

Breast cancer, currently affecting 1 in 8 women, will become the most prevalent cancer by 2040, according to recent estimates.

Iodine is necessary for the normal development of breast tissue and has been shown to suppress breast cancer cells and tumor growth.

"Studies dating back nearly 40 years ago show that iodine deficiency in rats pro-

duce the exact precancerous changes seen in humans—dysplasia and hyperplasia," Dr. Brownstein wrote in his book "Iodine: Why You Need It, Why You Can't Live Without It."

A study published in 1975 found that long-term iodine depletion led to atypical changes in rat mammary tissue. "This is the precursor to breast cancer," Dr. Brownstein said.

It was also reported in a 1996 study published in the *Journal of Surgical Oncology* that after rats were induced with cancerous tumors using a carcinogen, iodine was shown to suppress tumor growth in breast tissue.

Breast tissue concentrates and stores iodine at high levels, according to Dr. Brownstein's book, which supports the proposed link between iodine and cancer risk.

Two other factors contribute to the link between breast cancer and iodine deficiency, Dr. Brownstein wrote. First, iodine deficiency increases estrogen production, and second, it heightens the sensitivity of breast tissue to estrogen. Both outcomes "increase the chances of developing disease(s) of the breast, including breast cancer."

A 2011 review article published in the *Journal of Evidence-Based Integrative Medicine* also notes a significant connection between breast cancer and thyroid disease, indicating a potential shared factor, with iodine deficiency

Specific Diets May Cause Iodine Deficiency

- Diets without ocean fish or sea vegetables
- Diets containing low-iodized salt
- Vegan and vegetarian diets
- Diets high in consumption of bakery products that contain bromide

Dr. Brownstein believes that few people can get enough iodine from food, so supplementing may be necessary.



CATHERINE FALLS COMMERCIAL/GETTY IMAGES

Linked to Cancer and Thyroid Disease

possibly being the common link.

Prostate Cancer

There is limited research on the role of iodine in prostate cancer, the second-leading cause of cancer death in men in the United States.

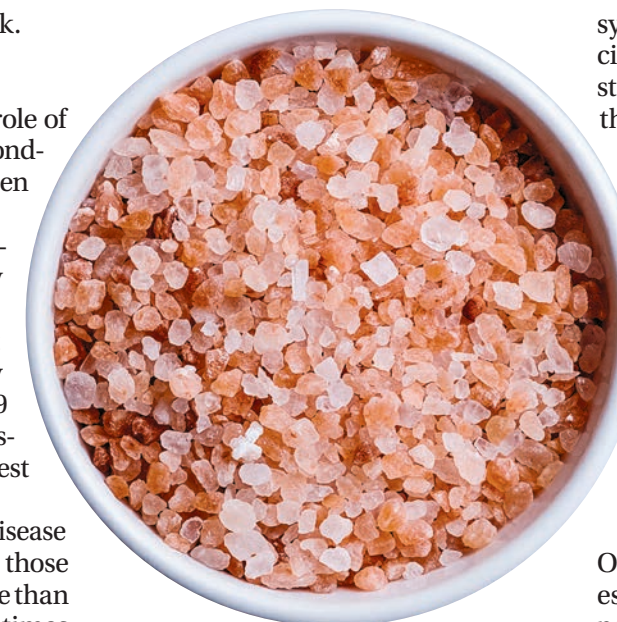
A 2007 study investigated the possible link between iodine deficiency and the risk of developing prostate cancer. The findings revealed that people with the highest urinary iodine to creatinine ratios had a 29 percent lower risk of developing prostate cancer than those with the lowest iodine levels.

Additionally, a history of thyroid disease doubled prostate cancer risk, with those having had thyroid disease for more than 10 years having more than three times the risk. "Although the role of dietary iodine remains speculative, a role for thyroid disease and/or factors contributing to thyroid disease as a risk factor for prostate carcinogenesis warrants additional investigation," the study authors wrote.

Other Common Cancers

The thyroid gland heavily relies on iodine, and iodine deficiency has long been recognized as a factor associated with a higher risk of developing thyroid cancer, the most common malignancy of the endocrine system.

Because of its effect on the endocrine



Himalayan salt contains trace minerals, including a small amount of iodine and can help the body deal with iodine-depleting substances like bromide and fluoride.

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system, low iodine intake has been associated with an altered hormonal state. A study published in *The Lancet* highlights the potential link between low iodine intake and increased risk of breast, endometrial, and ovarian cancers, suggesting that increasing dietary iodine intake may help reduce the risk of these cancers.

Rates of uterine and ovarian cancer are currently on the rise, with uterine cancer becoming more prevalent in women under 49.

Why Is Iodine Deficiency Surging?

Officially, iodine deficiency affects an estimated 35 to 45 percent of the global population. But the actual number may be much higher, according to Dr. Brownstein, who has more than 25 years of experience testing thousands of people. Most people aren't routinely screened for this essential nutrient, he said.

Several factors cause iodine deficiency.

Overfarming

One significant contributing factor to iodine deficiency is the depletion of iodine in the soil, according to Dr. Brownstein. "We used to get iodine from some of our food grown in iodine-containing soil," he said. But overfarming and the use of pesticides and insecticides containing toxins such as fluorine and bromine have led to its reduction.

Ocean Pollution

The oceans, another significant source of iodine, have been polluted, which has further contributed to the problem, Dr. Brownstein said. Man-made chemical pollutants such as plastics and heavy metals not only harm marine life but also contaminate seafood, a known source of dietary iodine.

That means that the iodine we could get from these natural sources now comes with other substances we would be better off without.

For example, seaweed and seafood are excellent sources of dietary iodine, but studies have found high levels of heavy metals such as lead, cadmium, and arsenic in both.

Overexposure to Halides

The balance between essential and nonessential halides, chemical compounds containing halogens, plays a role in iodine deficiency. According to Dr. Brownstein, excessive bromide or fluoride can displace iodine in the body.

A 2020 study published in *Nutrients* outlines how bromine and brominated compounds, as well as fluoride and fluorinated compounds, have been found to interfere with iodine uptake.

Bromine is used as an insecticide, fumigant, water purifier, emulsifier in soft drinks, and dough softener and is found in fire extinguishers, pharmaceuticals, and bromated vegetable oil. It's also a fireproofing agent in mattresses, carpets, furniture, and clothing.

Fluoride isn't only added to the water supply in the United States but is also found in our air, soil, food, drinks, medications, and dental products.

Assessing Iodine Status

Iodine deficiency can lead to hypothyroidism and other thyroid issues, as inadequate iodine prevents the thyroid from producing sufficient hormones, affecting people in a multitude of ways, some of which may not be obvious.

Testing

The iodine loading test, developed by Dr. Guy Abraham, is considered one of the best functional tests for evaluating iodine status, according to Dr. Brownstein. The test measures iodine content in the urine before and after taking an iodine supplement.

"By subtracting these numbers, you can determine how much iodine your body retained," he said. "Because iodine is cleared mostly through the kidneys, the amount retained reflects the body's deficiency level."

If only a small portion is retained and most is excreted, it indicates the body has sufficient iodine stores. High retention and low secretion signal iodine deficiency, as the body holds onto more of the supple-

mental iodine to replenish depleted levels.

Most people tolerate iodine supplements well, but some may have sensitivities, Dr. Brownstein said. Possible reactions include headaches and upset stomach.

"It is always advisable to seek the guidance of a knowledgeable health care professional who is familiar with iodine supplementation and testing," he said.

Supplementing

The recommended dietary allowance for iodine is 150 micrograms. This is the minimum daily amount estimated to prevent developing a goiter, based on animal studies, according to Dr. Brownstein. "But this is not the optimal amount," he said.

Research published in the *Sultan Qaboos University Medical Journal* found that the body of a healthy adult contains 15 to 20 milligrams of iodine. About 70 to 80 percent of that is used by the thyroid gland.

Given differences in factors such as exposure to iodine-displacing chemicals, optimal daily iodine intake can vary significantly among individuals. Optimal intake is best determined through lab testing and guidance from an iodine-knowledgeable practitioner, Dr. Brownstein said.

Our bodies store some nutrients but lack reserves of accumulated iodine. "If you don't take iodine for a day or two, you start to become deficient," he said.

It's best to obtain nutrients from food, particularly from an organic diet, as it generally contains lower amounts of pesticides and insecticides, which reduce iodine uptake.

Lugol's Solution

Different tissues in the body require varying forms of iodine; some preferentially take up iodide, the reduced form, which contains an extra electron, and others prefer iodine, the oxidized form, according to Dr. Brownstein.

"A combination of iodine and iodide, such as Lugol's iodine solution [5 percent iodine (I₂) and 10 percent potassium iodide (KI)], can effectively target the iodine-requiring receptors in the body," he said.

Dr. Brownstein said that he could reduce thyroid hormone dosages significantly when he started using Lugol's solution before thyroid hormone treatment.

"The percentage of my patients requiring thyroid hormone decreased from 75 percent to 25 percent, and the average dose decreased from two grains (120 milligrams) to 30 milligrams of natural thyroid hormone," he said. "Additionally, about 50 percent of these patients were able to discontinue thyroid hormone treatment altogether, as I addressed the underlying cause of their hypothyroidism, which was iodine deficiency."

Man-made chemical pollutants such as plastics and heavy metals not only harm marine life but also contaminate seafood, a known source of dietary iodine.

When Taking Iodine, Don't Forget the Salt

When Dr. Brownstein's patients began using iodine supplementation, those with low salt intake reported experiencing adverse reactions, he said. In those cases, the patients unintentionally triggered the release of bromide and, in some cases, fluoride from tissues.

This detoxification process can lead to fatigue or headaches, he said. "I find that taking salt with iodine really minimizes the side effects. Enough salt will competitively inhibit bromide and help its excretion."

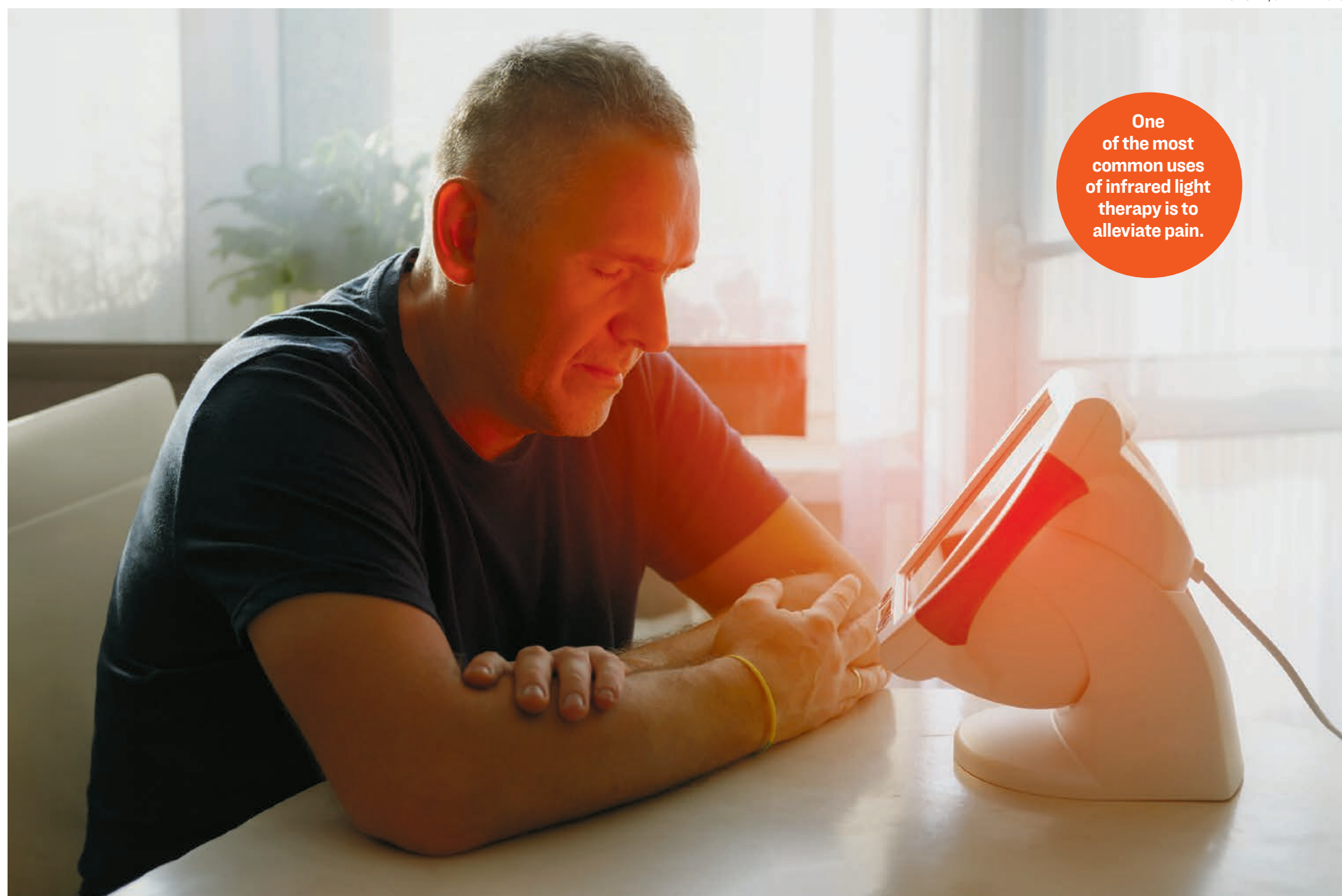
But not all salt is created equal. "There is good salt and bad salt," Dr. Brownstein said. Refined salt, the thin white salt you usually see in restaurants, should be avoided, he wrote in his book "Salt Your Way to Health."

Refined table salts are stripped of minerals and often contain additives such as anti-caking agents, ferricyanide, and aluminum. Unrefined crystal salts such as Celtic sea salt, Redmond Real Salt, and Himalayan salt provide chloride and more trace minerals.

Christy A. Prais received her business degree from Florida International University. She is the founder and host of *Discovering True Health*, a YouTube channel and podcast dedicated to health and wellness. Prais also serves on the advisory board at the Fostering Care Healing School. She is a contributing journalist for *The Epoch Times*.

The thyroid requires a daily supply of iodine to manufacture sufficient hormones.





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Infrared Light for Pain, Inflammation, and Accelerated Healing

The healing power of light is getting new acknowledgment—and new forms of delivery

Continued from Page 13

and to regenerate damaged tissues. A review article defines photobiomodulation as “the use of red or near-infrared light to stimulate, heal, regenerate, and protect tissue that has either been injured, is degenerating, or else is at risk of dying.” The article reviewed the effectiveness of using PBM in disorders of the brain.

Infrared Light for Pain

One of the most common applications of infrared light therapy is to alleviate pain. A double-blind, placebo-controlled trial investigated the effects of infrared (IR) therapy in patients suffering from musculoskeletal low back pain who were attending a pain management clinic. The IR therapy group showed a progressive decline in pain levels of approximately 50 percent, which was more significant toward the end of the six-week study period. “This was highly significant both by within-group comparison and compared with the placebo group,” the study authors said. The study concluded that infrared therapy “clearly demonstrated that it is easy to use, safe and effective, and reduced chronic back pain by 50% over six weeks.”

Infrared Light for Inflammation

Because inflammation is implicated in many chronic diseases, doctors, researchers, and scientists are eager to explore new ways to decrease its harmful effects. An article in AIMS Biophysics published in 2017 states, “One of the most reproducible effects of PBM is an overall reduction in inflammation, which is particularly important for disorders of the joints, traumatic injuries, lung disorders, and in the brain.” The article concluded that the use of red and near-infrared light has been shown to “reduce inflammation in the brain, abdominal fat, wounds, lungs, [and] spinal cord.”

Infrared Light for Accelerated Healing
One study in Photodermatology, Photoimmunology, and Photomedicine pub-

lished in 2009 demonstrated that using infrared light could induce healing at a cellular or molecular level. The researchers observed that “low-level exposure to 980 nm of laser light can accelerate cell growth in a wound healing model.” “Because our measurements were obtained from an in vitro cell culture model, these results also suggest that the mechanisms involved in the acceleration of cell growth following laser exposure are cellular or molecular in nature,” they wrote.

Light therapy is also being used to improve wound healing in diabetics. A review in The Scientific World Journal states that phototherapy has shown a vast improvement in wound healing in those with diabetes. It also states that at the correct laser parameters, phototherapy has an anti-inflammatory and protective effect on diabetic cells and that there’s a stimulatory effect on the mitochondria with a resulting increase in adenosine triphosphate (ATP).

Infrared Light for Disorders of the Brain
Another application for infrared light therapy is to treat disorders of the brain. A review article published in BBA Clinical looked at several studies exploring photobiomodulation for brain disorders. It states that near-infrared light can penetrate the head to reach the brain and is absorbed by the mitochondria resulting in increased blood flow, energy, neuroprotection, decreased inflammation, and brain repair. The review also suggests photobiomodulation could be used to treat stroke, traumatic brain injury, Alzheimer’s, Parkinson’s, anxiety, and depression and may also offer cognitive enhancement in healthy people.

The review reads: “Many investigators believe that PBM for brain disorders

will become one of the most important medical applications of light therapy in the coming years and decades. Despite the efforts of ‘Big Pharma,’ prescription drugs for psychiatric disorders are not generally regarded very highly (either by the medical profession or by the public), and many of these drugs perform little better than placebos in different trials, and moreover can also have major side-effects.”

What Is Red and Infrared Light Therapy?

Red light and infrared therapy are different and often confused.

Infrared light represents part of the electromagnetic spectrum that isn’t visible to the human eye. It has wavelengths slightly longer than visible red light and can penetrate deeper into the body. Red light therapy uses light in the visible spectrum that has slightly shorter wavelengths. Red light therapy only penetrates superficially and is used primarily for skin conditions and hair regrowth.

Infrared is often divided into three spectral regions—near-, mid-, and far-infrared. Each has a different wavelength and has its own clinical applications. Jim Ohneck, CEO of Epoch Lasers, has spent the past 20 years developing laser light technology, and his present high-powered therapeutic laser is now in its fourth generation. “There are categories of infrared light, and they all work differently. They may have the same cellular level results in some respects, in that infrared light in those areas will stimulate the mitochondria, but they all are absorbed differently by the tissues,” he told The Epoch Times.

“Because of that, some are more effective than others. The difference is

how it treats the body, which is important.”

How Light Works in Healing

Several studies about photobiomodulation discuss the way light affects our physiology.

Light elicits a healing response in the body through its absorption by chromophores in our cells’ mitochondria, which accelerate the production of ATP. One of ATP’s various functions is to help support healing in the body. Any decrease in the availability of ATP negatively affects every aspect of the healing process, according to a study published in 2022 titled “Intracellular ATP Delivery Causes Rapid Tissue Regeneration via Upregulation of Cytokines, Chemokines, and Stem Cells.”

A review analyzing the effects of light therapy on wound healing in diabetic patients explains that laser light is absorbed by chromophores in the cell—mitochondria in the case of visible red light—which leads to an increase in adenosine triphosphate, reactive oxygen species, nitric oxide, and intracellular calcium. These increases ultimately result in increased cell survival and wound healing.

Another review discussing the mechanisms involved in photobiomodulation explains that “the first law of photobiology states that photons of light must be absorbed by some molecule (called a chromophore) located within the tissue to have a biological effect.” One of the principal chromophores responsible for the beneficial effects of PBM is located inside the mitochondria.

A Future Alternative to Pain Medications

In 2022, a poll of two-thousand adults revealed that 1 in 3 Americans take over-the-counter pain medication every day, and 12 percent reported taking pain medications “a few times a day.” But respondents seemed more interested in avoiding pain than getting rid of it, with 57 percent saying they preferred a preventive approach and 15 percent saying they reacted to pain after it had already begun.

With the use of pain medications reaching epidemic proportions, red and infrared light therapy is a safe alternative with minimal risk.

For anyone struggling with health challenges and looking for a more natural solution that is low-risk, infrared-light therapy might be a great option. Just be sure to find a specialist who can help you find the right type, frequency, and intensity for your particular condition.

CORRECTION

The article “Could a Carbohydrate Cure Alzheimer’s?” published on Aug. 7, 2023, ran under an incorrect byline. Emma Suttie is the author of the article. The Epoch Times regrets the error.

MICROBIOME

A Practice to Help C-Section Babies Gain Beneficial Microbes

Vaginal seeding may improve immunity and neurodevelopment by improving a newborn’s microbiome

By Armen Nikogosian

Cesarean section (C-section) deliveries in the United States made up more than 30 percent of all births in 2021. An important distinction between babies born by C-section and those born naturally is a lack of bacterial exposure to their mother’s vaginal and fecal microbiome. This lack of exposure stifles the development of their gut microbiome, which leads to an increased probability they will suffer from a wide variety of ailments, including increased infections, diabetes, arthritis, obesity, allergies, asthma, and autoimmune disease.

A possible solution to this problem is a new procedure called vaginal microbiota transfer, or simply “vaginal seeding.” This technique allows for the mother’s beneficial vaginal microbes to be administered to the newborn after C-section, and it might improve the child’s neurological development and reduce disease burden later in life.

C-Section: Medical Versus Elective
A C-section is a surgical procedure in which the baby is delivered through an incision in the mother’s abdomen.

C-section is performed for various reasons, including nonprogression of labor, breech positioning, multiple gestations, and hydrocephalus (excess fluid within the baby’s head). Depending on the circumstances, the procedure can be lifesaving for both the mother and the baby.

Planned C-sections can be scheduled by the mother or the doctor, and a medical reason isn’t always required. As awareness grows of the repercussions of C-sections on the baby, such as altered gut microbiome, a weaker immune system, and other health issues, there could be a decrease in the number of C-sections performed when they aren’t necessary.

C-Section Babies at Increased Risk of Health Problems

C-section babies are more likely to suffer from a wide variety of health problems because of their reduced diversity of gut microbes that affect metabolism and immune function. Stool studies in C-section babies showed that their microbiomes were dominated by bacterial species regularly found in hospitals and on the skin, such as *Staphylococcus*, *Streptococcus*, *Klebsiella*, and *Enterococcus*.

During the natural birthing process, the baby travels through the vagina, and a large number of microbes cover its body and are ingested. Stool studies in vaginally birthed babies revealed *Lactobacillus*, *Bifidobacterium*, *Bacteroides*, and *Prevotella* bacteria.

These bacteria become the seeds from which the baby’s gut microbiome will develop and one day expand into a mature and diverse state. The connection between the gut microbi-



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ome and immune function, metabolism, and a host of other physiological processes has been well-established over the past several decades.

Vaginal Seeding May Replicate Nature

Vaginal seeding was first discussed in a 2016 pilot study, which found that a healthy and diverse gut microbiome could be restored through a simple technique. Doctors inserted sterile gauze into the mother’s vagina an hour before performing the C-section. Within two minutes of delivery, the newborn babies were swabbed with the fluid-saturated gauze, beginning with their mouth, then their face, then the rest of their entire body. All mothers were screened for any harmful pathogens they could transfer to the infant, and seeding was only performed if all tests were negative for Group B *Streptococcus* and bacterial vaginosis and if vaginal pH was normal in the hour preceding the C-section.

The babies were tested one month after birth, and it was shown that the microbiomes of the vaginally seeded babies more closely resembled those of babies born vaginally when compared with the control group of babies born by C-section.

A more extensive observational study performed in 2021 confirmed the results. Further, it expanded our understanding of the role of vaginal microbes in the developmental trajectory of a child’s gut microbiome. The study suggested that vaginal fluid and its microbes can seed pioneer species that will later facilitate the colonization of other beneficial microbes.

In addition to improving the child’s health, there is evidence that vaginal seeding can enhance the baby’s neurological development. In a recent triple-blinded study in China, 76 infants born by C-section were randomly

▲ Babies delivered by C-section are more likely to suffer various health problems, possibly because of reduced microbial diversity, which impacts metabolism and immune function.

30%
OF ALL BIRTHS

in the United States in 2021 were cesarean section deliveries.



▲ Vaginal seeding may enhance a child’s neurological development and general health.

separated between a vaginal-seeded group and a control group “seeded” with a saline solution.

Results revealed that in the vaginal-seeded group, there was a significant increase in neurodevelopment at 6 months of age compared with the control group. Neurodevelopment was measured by gross motor, communication, problem-solving, personal-social, and fine motor skills. Improvements in neurological development were correlated with improvements in the infants’ gut microbiomes and metabolomes.

Although not currently entirely accepted by large health care institutions and medical colleges such as the American College of Obstetricians and Gynecologists, the initial data are promising, and successful randomized, blinded studies have been performed. This simple procedure could reduce many health problems without exposing the baby to any more risk than that found in the traditional vaginal birthing process.

Once larger and more long-term trials are completed, vaginal seeding could one day become standard protocol in hospitals worldwide for babies delivered via C-section. There are tremendous implications of reducing the risk for infections, obesity, allergies, asthma, and autoimmune disease and improving the neurodevelopmental arc of close to one-third of babies.

Armen Nikogosian, M.D., practices functional and integrative medicine at Southwest Functional Medicine in Las Vegas. He is board-certified in internal medicine and a member of the Institute for Functional Medicine and the Medical Academy of Pediatric Special Needs. His practice focuses on treating adults and children with illnesses such as chronic gut issues, autoimmune conditions, autism and other complex medical conditions. He also treats healthy adults for anti-aging & health/performance optimization.

Tooth Loss Linked with Inflammatory Bowel Disease

By Sarah Cownley

Until recently, the relationship between tooth loss and inflammatory bowel disease (IBD) has been largely overlooked by medical researchers. However, an emerging body of evidence suggests that these two conditions may be closely linked.

Two recent studies from a European research project have highlighted a correlation between IBD and severe oral health issues such as extensive tooth loss in adults—offering insight into an often-overlooked area of dental health.

Periodontitis has previously been linked to cardiovascular disease and diabetes. However, this new study is shedding light on the relationship between periodontitis and inflammatory bowel disease.

For the study, about 1,100 patients answered survey questions online. Half of the participants had IBD in the form of Crohn’s disease, and the other half had IBD in the form of ulcerative colitis. About 3,400 people without any form of

IBD also participated in the study and were matched for certain criteria to the patients with IBD.

The study not only found that participants with intestinal disease had worse oral health than those without IBD, but it also noted that the oral health of people with Crohn’s disease was more affected, as these patients had lost more teeth than those with ulcerative colitis.

“Both diseases can be described as a strong overreac-



▲ Gum disease, or periodontitis, has been linked to diabetes. EZZPS/SHUTTERSTOCK

tion of the immune system against a theoretically relatively mild bacterial trigger. You can say that the immune system attacks one’s own body,” researcher Andreas Stavropoulos said.

This study helps to bring forward a discussion about the relationship between gut health and oral health.

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

MIND BODY CONNECTION

Treating Fear to Resolve Chronic Low Back Pain

Research finds that fear can inflame pain, but learning to grapple with it can provide a potent treatment

By Henry Jom

Dr. Akhil Chhatre, director of spine rehabilitation at Johns Hopkins Hospital, sees hundreds of chronic back pain patients each week.

For the past 10 years, Dr. Chhatre has treated an array of chronic back conditions, including disc herniations, nerve damage, and nonspecific low back pain. After identifying important rehabilitation goals with the patient, he works to understand the exact nature of each patient's condition, which can include MRIs and functional tests. In some instances, a block or epidural is needed to identify the source of low back pain to determine a management strategy.

Yet for patients with chronic low back pain, Dr. Chhatre says the fear factor often needs to be addressed.

"There is absolutely a link between fear and chronic low back pain. The link is emotional, and the tie between the feelings that pain evokes and a similar heightened sensation that fear evokes," he told The Epoch Times.

"Those who do not have fear have a much cleaner and shorter path to recovery and better prognosis."

Pain-Related Fear and Chronic Low Back Pain

A 2017 study in Switzerland found that enhanced pain-related fear plays a significant role in chronic low back pain by amplifying the experienced disability.

The study, which involved 20 people with chronic low back pain and 20 healthy people, found that pain-related fear dampened neural communications between two key areas in the brain—the periaqueductal gray (PAG) and the amygdala—essential for pain modulation. Researchers found that the PAG processed more negative emotions associated with chronic low back pain than actual pain.

Dr. Chhatre noted that although he doesn't think fear leads to chronic low back pain, these conditions can affect each other.

Chronic low back pain often starts as a physical injury in the acute or initial stages—whether pressure on the spinal nerves, misalignment of the spine, traumatic injury, fracture, muscle strains, or ligament sprains.

But once the pain lasts more than 12 weeks, the brain often becomes sensitized to it. In many cases, a psychosocial component is a likely factor when a specific physical cause can't be identified.

Researchers previously found that roughly 85 percent of chronic low back pain cases are nonspecific, meaning that there are no anatomical abnormalities that clearly explain pain symptoms.

A 2020 meta-analysis involving a total of 3,949 participants (in 52 studies), of whom 3,013 (in 42 studies) had chronic low back pain, found that pain-related fear, catastrophizing, and depression are significantly associated with reduced movement and more rigid spinal behaviors in patients with low back pain.

The finding comes at a time when low back pain has become a global epidemic, with a recent study in The Lancet finding that in 2020, 619 million people worldwide suffered from low back pain. That number is expected to reach 843 million by 2050.

The Lancet study also reads, "A major challenge in minimizing the burden of low back pain will be to facilitate identification of and access to effective non-pharmacological interventions in order to move away from harmful low-value health-care options,

such as opioids."

Pain reprocessing therapy is one psychological treatment strategy that has been shown to be effective in alleviating chronic low back pain.

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time watching television or using their mobile devices, which impaired sleep, and consumed less healthful food, the researchers wrote.

The study found that girls diagnosed with precocious puberty during the pandemic tended to have higher body mass index (BMI) scores than girls who weren't diagnosed (between 1.01 and 1.23 compared with 0.69 and 1.15).

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Early Puberty Cases in Girls Increased During COVID-19

Researchers point to lockdown measures and stress as factors in the rise in precocious puberty

By Katabella Roberts

The number of girls going through early puberty increased during the COVID-19 pandemic compared with the previous four years, according to a new study published on Aug. 3.

The study, titled "Precocious Puberty Diagnoses Spike, COVID-19 Pandemic, and Body Mass Index: Findings from a Four-Year Study," was published in the Journal of the Endocrine Society.

As part of the study, researchers in Italy evaluated the incidence rate of abnormal early onset puberty, also known as precocious puberty, before and after the COVID-19 pandemic in Italy compared with the incidence of precocious puberty over the previous four years.

They also assessed a possible relationship between COVID-19 and pandemic-related lifestyle changes.

Puberty usually begins in girls between the ages of 8 and 14, according to the National Library of Medicine, although the exact age at which it starts depends on multiple factors such as family history, health, and nutrition.

In many cases, precocious puberty has no clear cause. Some cases may be attributed to genetic or hormonal issues, such as disorders of the ovaries or a tumor of the hypothalamus, an area of the brain that produces hormones controlling everything from body temperature to mood.

However, precocious puberty is rare, affecting roughly 1 percent of the population in the United States, according to the National Institutes of Health.

For their study, researchers collected anthropometric, biochemical, and ra-



◀ Poor sleep, weight gain, stress, and a lack of exercise contributed to higher rates of precocious puberty during COVID-19, say researchers.

biological parameters from 133 girls between January 2016 and June 2021 to evaluate the incidence of precocious puberty before and after the pandemic.

Study Findings

Using retrospective health records from the Pediatric Endocrine Unit at the University of Genova, they found 72 cases of precocious puberty between January 2016 and March 2020 and 61 cases between March 2020 and June 2021, translating to a 30 percent higher incidence during COVID-19, or four additional cases per month.

In their study, researchers noted that the number of girls referred to pediatric endocrinologists for suspected preco-

ocious puberty had increased significantly over the past two years, with such cases reported worldwide.

They noted that this may be due in part to strict lockdowns initiated during the pandemic, which resulted in radical changes in habits and family lifestyles that seriously affected children's lives.

With parks and gyms closed at the time, this led not only to a reduction in physical activity over a long period but also to reduced social interaction, which the researchers said may have affected children's physical and mental health.

Because of the strict lockdowns, researchers said, children spent more

time watching television or using their mobile devices, which impaired sleep, and consumed less healthful food, the researchers wrote.

The study found that girls diagnosed with precocious puberty during the pandemic tended to have higher body mass index (BMI) scores than girls who weren't diagnosed (between 1.01 and 1.23 compared with 0.69 and 1.15).

Increased Body Weight and Early Puberty

Those girls diagnosed with early onset puberty also spent an average of nearly two hours per day using electronic devices, and 88.5 percent of them stopped any physical activity, researchers said.

Neuroscience Lab at Dartmouth College in Hanover, New Hampshire.

"Estimates from the literature are that 80 to 90 percent of chronic low back pain is primarily related to the brain-body issues that PRT addresses, instead of being related to specific pathology in the back," Mr. Wager told The Epoch Times in an email.

PRT helps patients learn that spinal and brain pathways can "sensitize after injury," which is normal and reversible, he said.

"It uses techniques for focusing on the body with attention on pain while re-appraising it as safe, reducing fear and avoidance, and facilitating the desensitization process," Mr. Wager said.

The principles used by PRT overlap with other cognitive and behavioral therapies, but the combination of techniques is unique.

Other psychophysiological therapies to treat low back pain have also shown potential.

Other Promising Psychophysiological Approaches

A pilot study involving patients with nonspecific low back pain found that psychophysiological symptom relief therapy using a similar approach to PRT (mindfulness-based stress reduction) alleviated pain symptoms in patients with chronic nonspecific low back pain.

In Australia, a study by professor James McAuley from the University of New South Wales (UNSW) School of Health Sciences and Neuroscience Research Australia found that patients who underwent a 12-week "sensorimotor retraining" course had clinically meaningful results when compared with those who undertook a 12-week sham treatment course designed as a control.

"People were happier, they reported their backs felt better, and their quality of life was better," Mr. McAuley told the UNSW Newsroom.

"It also looks like these effects were sustained over the long term; twice as many people were completely recovered. Very few treatments for low back pain show long-term benefits, but participants in the

trial reported improved quality of life one year later."

The Future of Treating Back Pain

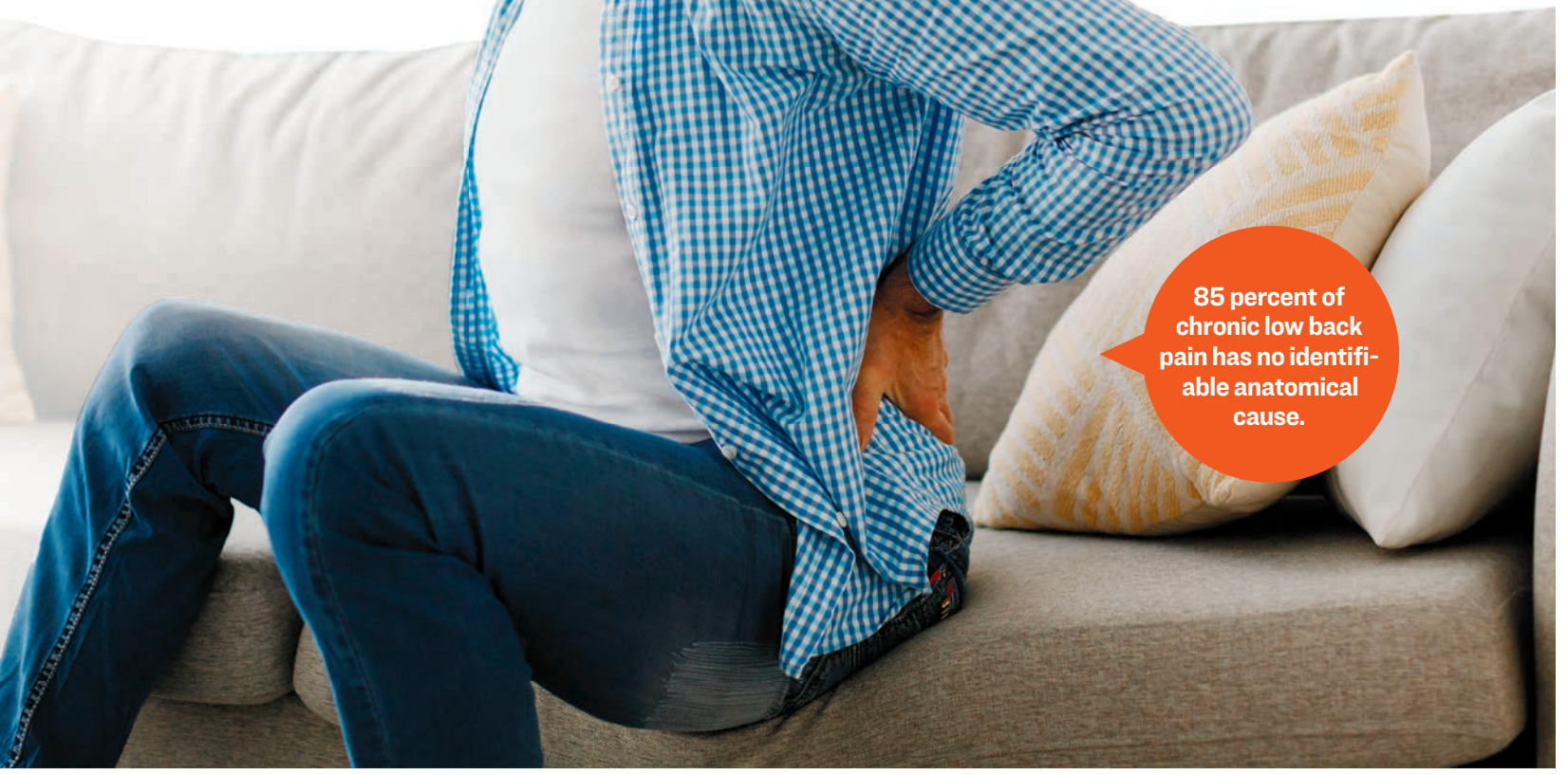
Currently, PRT has been adopted by multiple centers in the United States, but how widespread it becomes depends on the availability of information and training, Mr. Wager said.

In Australia, adopting sensorimotor retraining into the work of clinicians, physiotherapists, and exercise physiologists is expected to take place in the near future.

Dr. Chhatre said physical therapists have the option of providing PRT to patients, but it needs to be part of their care plan, which often includes treatments and exercises to manage the physical aspect of chronic low back pain. Patients can also be referred to trained psychologists.

"Most people are not happy just knowing the source of their pain—they want to get some improvement, either with their pain level or their function—and all of this adds up to quality of life," he said.

"Something as simple as pain reduction and sensory retraining techniques—if we were to write that on a prescription, therapists would offer that."



◀ 85 percent of chronic low back pain has no identifiable anatomical cause.

PROSTOCK-STUDIO/SHUTTERSTOCK

"These data are in line with the positive worldwide trend in weight gain reported before and during the COVID-19 pandemic, and the data reported by others who found a significant increase in BMI during lockdown in Italian girls diagnosed with CPP [central precocious puberty] during the COVID-19 pandemic," the researchers wrote.

"Our study confirms the rise in precocious puberty diagnoses during COVID-19 and identifies contributing factors such as poor eating and exercise habits, too much screen time, and impaired sleep," said study author Dr. Mohamed Maghnie of the University of Genova and the Giannina Gaslini Institute in Genova, Italy. "We found an increase in weight gain among girls diagnosed with precocious puberty during the pandemic, and rapid increase in body weight is associated with advanced pubertal development."

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◀ Girls diagnosed with precocious puberty during the pandemic tended to weigh more.

While researchers noted that lifestyle changes during the pandemic may have led to early onset puberty, they also noted the role that psychological stress and other factors—including the increased use of hand sanitizers—may have played in the increased number of early puberty cases.

"The role of stress, social isolation, increased conflicts between parents, economic status, and the increased use of hand and surface sanitizers represent potentially further interesting hypotheses as to why early puberty is increasing in youth," Dr. Maghnie said. "The consequence of biological adaptation cannot be entirely ruled out."

Researchers concluded that further short-term and long-term rigorous epidemiologic and mechanistic studies are needed to fully assess the relationship between the COVID-19 pandemic and early progressive puberty.

Easing Hormonal Imbalances With Cycle-Syncing

Women can harmonize with the four phases of their monthly cycle to improve health and productivity

By Jessie Zhang

Cycle-syncing—a practice among women of aligning one's lifestyle and diet to the natural rhythm of her menstrual cycle—has been gaining popularity not just for managing periods and maximizing health benefits but also for getting the most out of life.

The method aims to help women better manage their hormones. Rebalancing hormones can help maintain health and vitality, according to holistic health practitioner and hormone expert Alisa Vittit, who introduced the term "cycle-syncing" in 2014.

Ms. Vittit has written three books on how women can work with their natural cycle to maximize their health and well-being.

Hormonal fluctuations lead to changes in inflammation, metabolism, and muscle activation, which influence

energy levels and performance.

Thus, cycle-syncing tailors workouts and diet to each phase of the menstrual cycle to better balance hormones, which in turn may lead to a range of health benefits, including improved energy levels, fewer PMS symptoms, and better health overall.

Working With Your Cycle

Ms. Vittit advocates that women facing menstruation issues try to plan their monthly activities around the main phases of their menstrual cycles.

The menstrual cycle includes four phases: follicular (pre-ovulation), ovulatory (ovulation), luteal (pre-period), and menstrual (period).

According to her research, certain times within the cycle are optimal for particular tasks and events.

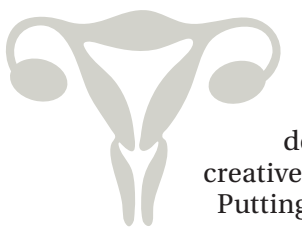
For instance, the follicular phase is perfect for taking on big new projects, as women tend to have a lot more energy during the first half of their cycles. The ovulatory phase is great for meetings and negotiating, and the luteal

phase is great for organization.

During menstruation, energy levels slow down, but the right and left sides of a woman's brain are communicating more than any other time of the month. This makes it an ideal time for making decisions and working on creative projects.

Putting it all into practice may be easier said than done, especially for those with irregular cycles. It may also be a demanding logistical task to plan every aspect of our lives according to our cycles.

Nevertheless, Ms. Vittit says that even small adjustments can go a long way in easing hormonal imbalances and symptoms. Taking on high-energy tasks during the low-energy menstruation phase, for example, may lead to extra stress and exhaustion.



◀ During menstruation, energy levels slow down, but the right and left sides of the brain are communicating more than any other time of the month.

Traditional Rituals

In some ancient cultures, a woman's menstrual cycle was regarded with respect. Some Native American tribes considered menstruating women spiritually powerful and sought their advice and guidance.

In some parts of Ghana and West Africa, young girls sit under beautiful ceremonial umbrellas when they begin menstruating.

"The family would give her gifts and pay her homage," Alma Gottlieb, professor of anthropology at the University of Illinois, told NPR. "She is celebrated like a queen."

In past decades, cultural views of menstruation have shifted, often replacing reverence with stereotypes of crabby women soured by "that time of the month."

Women these days also aren't taught to respect their cycles. Many are encouraged to power through them or even control them with the use of prescriptions. Cycle-syncing offers a more rational and traditional way to manage this aspect of women's lives.

619

MILLION people worldwide suffered from low back pain in 2020.

INTENTIONAL LIVING

12 Powerful Reasons Not to Overconsume

Our culture triggers us to buy more, but wise hearts know the benefit of wanting less

By Joshua Becker

I strive to lead a minimalistic lifestyle, but we're a family of four. As you might guess, we have beds, dressers, living room furniture, a television, a dining table, a desk, tableware, and my kids have their own rooms with their own possessions in their closets.

My wife likes to sew and read, and I like to cook, write, and play sports. We appreciate a minimalist lifestyle, but that doesn't mean we own nothing. To live is to consume after all.

However, our mission has been to own just what we need—to remove ourselves from the false promises—and consequences—of overconsumption.

Overconsumption starts when we leap beyond the boundaries of our needs and haphazardly wander into the realm of wants.

It's an easy leap to make. Credit cards allow us to spend beyond our income while advertisements

promise fulfillment through material possessions.

Our culture normalizes overconsumption and fuels a desire for larger homes, faster cars, fashionable attire, newer tech—and storage unit rentals. We are sold an illusion of happiness that delivers only larger desires, creating a cycle that robs us of purpose, misdirects our passions, and depletes our resources.

It's time to break free.

We need to recognize that overconsumption isn't delivering happiness or satisfaction. Consumption is a necessity, but overconsumption isn't. We can lead a more fulfilling and enjoyable life by intentionally rejecting it.

Here are 12 compelling reasons to escape overconsumption in your life:

1. Reduced Debt

Americans have an average credit card balance of \$5,910 and collectively owe \$1 trillion in credit card debt.

Reducing our attachment to material possessions frees us to pursue things that matter.

This debt burden induces stress and binds us to jobs we dislike. Buy less, get out of debt.

2. Less Maintenance

Owning fewer possessions means less time and energy spent on upkeep.

Reducing our attachment to material possessions gives us more freedom and time for pursuits that truly matter.

3. Diminished Lifestyle Envy

Today's digital age bombards us with lifestyle images that spur envy and dissatisfaction.

When you consciously reject overconsumption, it offers you a clear goal that makes it easy to quiet the desire to constantly upscale to "keep up with the Joneses."

4. Minimal Environmental Footprint

Overconsumption strains our planet's resources. Living simply respects our planet's capacity and contributes to its sustainability.

5. Less Influence From Trends and Fads

Every generation brings new trends that entice us to spend.

Stepping away from overconsumption lets us appreciate the value of timeless items and saves us from chasing fleeting fads.

6. Less Social Pressure

Our society promotes spending as a means to show our success. By resisting overconsumption, we can break free from the pressure to impress with material possessions.

7. Increased Generosity

Choosing minimalism over overconsumption gives us more time, energy, and financial resources. It also helps us take our attention off ourselves and see the actual need of others.

8. Greater Contentment

Some believe you need contentment to curb overconsumption.

However, my experience has been that actively resisting overconsumption cultivates a profound sense of content-

ment and satisfaction in our lives.

9. Heightened Awareness

Overconsumption blinds us to the false claims of fulfillment and happiness sold by retailers. Stepping back gives us a clearer perspective on these empty promises.

10. More Appreciation for Life's Intangibles

Real life thrives in the intangible: love, hope, faith.

Our actions should reflect our understanding that the most precious aspects of life aren't material possessions.

11. More Worthwhile Spending

Escaping overconsumption lets us to better direct our money toward what truly matters, whether that's donating to a cause we care about, traveling, or building an emergency fund.

12. Promoting Healthier Relationships

Overconsumption often strains relationships because of the financial stress it creates.

By breaking free from it, we can focus more on nurturing our relationships—especially as we free up time and resources for that purpose.

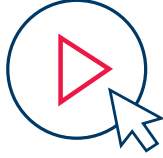




Breaking away from overconsumption isn't easy. If it were, more of us would be doing it. But it's a battle worth fighting.

Overconsumption steals more from our lives than we recognize.

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



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