

# MIND & BODY

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Eating breakfast within an hour of waking and getting morning sunshine could be the most critical factors in how well you sleep.

## SLEEP WELL

## Reset Your Circadian Clock With 2 Habits

The timing of our meals and sunlight exposure can offer a cascade of health benefits

By Amy Denney

**T**he notion that our circadian clock is simply about sleep is unfortunate. So is advice that puts our sleep habits on trial when our sleep-wake rhythm is woefully out of whack.

At least two daily habits that seemingly have nothing to do with sleep appear to reset the circadian clock—sometimes quite rapidly. Not surprisingly, the habits themselves revolve around timing: when to view light and when to eat.

In a physiological sense, we human beings are made from the air we breathe, the food we eat, and the sunlight that triggers biochemical processes in our bodies. This same sunlight feeds the plants we eat, which also feed the animals we eat. Plants are biochemically solar-powered, converting sunlight into

food and growth. All that to say, the sun is far more than a universal alarm clock, it has a biochemical effect on our bodies and everything we eat.

Now, scientists are beginning to figure out how that effect works—and how we can use it.

### A New Therapeutic Approach

Until recently, the idea that we could somehow improve our circadian rhythm didn't even exist. About the closest we came was the understanding that we need to get a good night's rest and that certain habits could influence that. The deeper biochemistry involved wasn't known.

"This idea of circadian enhancement

is super new," Josiane Broussard, assistant professor in the Department of Health and Exercise Science at Colorado State University, told *The Epoch Times*. "We know that the circadian rhythms are there. We know when we disrupt them we have all these negative health consequences, and we know they dampen, or flatten, with aging."

### Circadian enhancement through diet and light exposure offers a non-pharmaceutical way to address sleep issues.

Her postdoctoral work focused on obesity and insulin resistance, and her early studies were on molecular metabolism and sleep. She presented at the recent Digestive Disease Week conference in Chicago about just how vital our circadian regulation is to metabolic and cardiovascular health. In fact,

Broussard said it takes only two days of sleep deprivation for blood sugar levels to show measurements that indicate diabetic risk.

Most people can fix those issues quickly with the insights detailed below. But there are three groups that almost universally deal with circadian disruption that may be harder to fix: shift workers, teenagers, and people in their 60s who often suffer from daytime sleepiness and night disruption when their internal clock changes later in life. While we know that quality sleep is essential for overall health, it can sometimes feel very difficult to control, making it challenging to treat sleep issues—especially without medication.

But even for these people, taking the focus off sleep and putting it on other habits can make a significant difference.

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## ENVIRONMENTAL TOXINS

## Herbicide May Be Linked to Sexual Dysphoria: RFK Jr.

Herbicide atrazine linked to feminization of frogs; 10 percent of males became fully viable females

By Christy Prais

Presidential candidate Robert F. Kennedy Jr. says that he thinks many of the causes of sexual dysphoria, particularly with boys, are coming from chemical exposure. In particular, he mentioned the widely used herbicide atrazine.

In the June 5 interview, Kennedy and Jordan B. Peterson and Kennedy discussed a wide range of topics including Kennedy's presidential bid. When

the conversation turned to environmental issues, Kennedy noted that the "huge levels of depression" seen in today's kids, as well as "a lot of the sexual dysphoria that we're seeing," may be the result of toxic chemicals.

"These kids are swimming through a soup of toxic chemicals today, and many of those are endocrine disruptors," Kennedy said.

Kennedy said that one of the big issues is atrazine, which he says can be found

"throughout our water supply." He went on to reference a study in which male frogs were exposed to atrazine in a tank, leading to their chemical castration and forced feminization.

Even more concerning, he noted that the study found 10 percent of the male frogs turned into "fully viable females, able to produce viable eggs."

"If it's doing that to frogs, there's a lot of other evidence that it's doing it to human beings as well," Kennedy said.

YouTube has since taken the video of the interview down, claiming that it violates the platform's community guidelines. It is available on Rumble, however.

### The Science

The study that Kennedy referred to was led by Tyrone B. Hayes, professor of integrative biology at the University of California-Berkeley

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Studies found that atrazine is a potent hormone disruptor—even at low levels.



# Debunking THE DOGMA ABOUT FAT

## PART I | THE RISE OF SEED OILS AND CANCER

New forms of fat meant to save us from heart disease brought their own problems

By Marina Zhang

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

For half a century, health agencies and experts have recommended vegetable oils over saturated fats for cooking. They have told the public that vegetable oils are cardioprotective. However, research suggests that these oils may not be as innocuous as they seem.

When the term “cooking oil” is mentioned, the immediate image that comes to mind for most people is pale and yellow liquid in large transparent bottles labeled “vegetable oil.”

Though vegetable oils are a staple cooking oil for many Americans now, they are only a recent invention. Decades ago, common fats used in cooking were animal fats such as lard, butter, and suet, all of which tend to have a higher saturated fat ratio.

The current switch to vegetable oils can be traced back to researcher and physiologist Ancel Keys, who hypothesized in the 1950s that replacing animal fats higher in saturated fats with vegetable oils, which tend to be higher in polyunsaturated fat, would lower blood cholesterol levels and in turn, reduce heart disease.

This idea, and various market changes, led to the widespread adoption of this dietary shift. And based on the available evidence, it seems that the hypothesis wasn't entirely accurate.

While vegetable oils do lower blood cholesterol, they don't necessarily reduce coronary heart disease mortalities. In fact, many may put consumers at risk of other harm.

Nevertheless, Keys's hypothesis has persisted.

Starting in the 1960s, the American Heart Association put forward recommendations to switch from animal fat to vegetable oils. The idea influenced the first edition of Dietary Guidelines for Americans in 1980. Both the American Heart Association and the Dietary Guidelines for Americans, valid from 2020 to 2025, have recommended polyunsaturated fatty acid consumption over saturated fat.

### What Are Vegetable Oils?

The name “vegetable oil” can be a bit misleading. People may think that it's healthy because it's made from vegetables.

Most common vegetable oils are made from both edible and inedible plant seeds. Oils that are made from edible vegetable seeds include corn, soy, peanut, and sunflower oils,

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while oils made from inedible seeds include canola, cottonseed, and safflower oils. The name “seed oil” is less palatable than vegetable oil. These seed oils are high in polyunsaturated fat and are therefore prone to oxidation.

There are also oils made from the flesh of fruits, such as olive, palm, and coconut oils. These oils differ from most of the common vegetable oils as they have a low polyunsaturated fat content.

### Most Vegetable Oils Have 2 Key Problems

Contrary to food guidelines, most vegetable oils on the market may not be suitable for cooking for two main reasons.

#### 1. Prone to Oxidation

Many people have heard of oxidation but don't really know what it is. Oxidation is a chemical reaction in which atoms and compounds lose their electrons. These atoms become unstable and thus seek to recover their electrons, so they steal electrons from other compounds. Other compounds then steal from others, and this continues in a vicious cycle. Fire, for example, is a rapid form of oxidation.

Oxidation is an essential process, but too much oxidation harms the body. A fire in the fireplace is warming, but even a spark that escapes can severely damage a piece of furniture. So it is with oxidation. If a cell's DNA becomes damaged from losing electrons to oxidation, the DNA can become unstable and mutate. Cells that contain mutated DNA are at significant risk of becoming cancerous. This is why antioxidants such as vitamins C and E are vital to health.

The problem with polyunsaturated fats, such as those found in vegetable oils, is that they are highly oxidative. Polyunsaturated fats have two or more double—or unsaturated—bonds. These double bonds are highly reactive and oxidize when exposed to oxygen.

While polyunsaturated fatty acids spontaneously oxidize at room temperature, oxidation increases by several times during cooking. This has been demonstrated by Martin Grootveld, a professor specializing in bioanalytical chemistry and chemical pathology at De Montfort University in the United Kingdom. He further found that the higher the proportion of polyunsaturated fat, the greater the number of toxic oxidation products formed.

Oils that contain a high amount of omega-3 fatty acids are prone to oxidation, Sally Morell, founder of the Weston A. Price Foundation and author of 10 books on nutrition, told The Epoch Times. This is because omega-3 fatty



The polyunsaturated fatty acids in vegetable oils oxidize rapidly when heated during cooking.

acids contain the most double bonds in their structure, presenting many opportunities for oxidation. Naturally occurring omega-3 fatty acids have three to six double bonds.

Oils high in omega-3 fatty acids include flaxseed, walnut, and canola oil. Oxidized oil also goes rancid quickly, making it particularly odorous and unpalatable. For this reason, many mainstream vegetable cooking oils on the market have been refined.

#### 2. Usually Highly Refined

The refinement of vegetable oils involves many industrial chemicals and processes. First, the oil is extracted using a solvent. Hexane, a crude oil constituent solvent, is a popular choice for this process.

Hexane helps pull the oil from the vegetable and seed pulps, potentially leaving behind hexane residues. Acute exposure to hexane can cause irritation. The mixture is then degummed for impurities and winterized to separate waxes from the oil. The final steps are bleaching and deodorizing, during which the oil mixture goes through cycles of high heating to remove chemicals and give the final product a better appearance and more neutral flavor.

The actual harms of refined oils are unknown, though deodorizing has been shown to cause the formation of trans unsaturated fats, the worst fats to consume, and glycidol, a known carcinogen.

### Vegetable Oils and Cancer

Oxidation is linked to cancer, so some experts worry that consuming oxidants from heated vegetable oils may pose a greater cancer risk.

In the 1950s, several randomized controlled clinical trials began testing a diet low in animal fat; participants switched from consuming animal fats, such as milk and cheese, to a polyunsaturated vegetable-fat diet.

While these studies saw reductions in cholesterol levels and often a decrease in heart attacks, long-term and follow-up studies showed that those who had traded animal fats for vegetable oils and proteins often reported higher overall mortality, often with increased cancer deaths.

Starting in the 1980s, several studies also linked low blood cholesterol with cancer, though it hasn't been determined why this link exists.

“The people on the high vegetable oil died at higher rates from cancer, and there were a series of very high-level meetings at the National Institutes of Health throughout the 1980s trying to understand this very worrisome outcome,” investigative journalist Nina Teicholz said. “Those concerns were not resolved.”

The connection between seed oil oxidation and inflammation, and its rela-

tion with cancer, was first extensively outlined in Teicholz's book.

Teicholz is the first to label seed-derived vegetable oils as “seed oils” and spent a decade researching fats and oils to write her New York Times bestseller “The Big Fat Surprise.”

Although other health experts have also linked vegetable oil with obesity and diabetes, Teicholz said the evidence is usually from observational studies. In contrast, the cancer link was seen in randomized controlled trials, making it more robust.

### Saturated Fats Are More Suitable for Cooking

Fats high in saturated fat tend to be the most stable when cooked, Grootveld said. Because saturated fats contain no double bonds, they are much less reactive with heat and oxygen.

Grootveld, who ranked cooking oils based on their oxidative abilities, said that oils high in saturated fat, including animal fats such as lard and tallow, are the least prone to oxidation. Both lard and tallow contain about 40 to 50 percent saturated fat, accompanied by monounsaturated fat and meager amounts of polyunsaturated fat.

All animal fats contain low amounts of omega-3 and omega-6 fatty acids, but these fats generate only very low levels

of oxidation products because of their very high saturated and monounsaturated fat contents.

Some plant-derived oils, such as coconut, are predominantly composed of saturated fat and are also resistant to oxidation. Palm oil is also resistant since it contains large amounts of both saturated and monounsaturated fats.

Oils high in monounsaturated fat, such as olive and some types of sunflower, are less resistant to oxidation

than animal fats and may be suitable for low-temperature cooking at short intervals. These oils are more resistant to oxidation than polyunsaturated seed oils.

**Next Week:** Although research repeatedly shows that vegetable oils, particularly seed oils, are harmful when cooked, dietary guidelines and health organizations continue to promote vegetable polyunsaturated fats over animal fats. An expert gives three main reasons.

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Saturated fats (animal fats and coconut oil) are less prone to oxidation when cooking, as are oils high in monounsaturated fat, such as olive oil (at low temperatures).



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### WEIGHT LOSS

## 5 Fruits to Help You Lose Weight

Enjoy these delicious foods at specific times to gain additional benefits

By Ellen Wan & Weber Lee

Many people avoid eating fruit while trying to lose weight, but if you choose the right fruit, you will get nutrients that maintain a healthy metabolism, burn fat, and reduce cardiovascular disease, according to Cheng Hanyu, a Taiwanese nutritionist.

Hanyu suggests five fruits that aid weight loss:

#### Guava

Guava, a colorful tropical fruit with a unique tangy flavor, contains 68 calories per 100 grams.

Guava is rich in vitamin C, potassium, and dietary fiber. Dietary fiber provides a sense of fullness, and vitamin C aids cholesterol metabolism, effectively reducing cholesterol content in the body.

A study from India published in the Journal of Clinical and Diagnostic Research in 2016 showed that skinned or un-skinned guava reduces body mass index and blood pressure. Serum total cholesterol, triglycerides, and low-density lipoprotein cholesterol levels also decreased significantly.



#### Berries

Blueberries, cranberries, strawberries, and blackberries are high in dietary fiber and low in calories.

For instance, strawberries have an average of 32 calories per 100 grams. Berries are rich in anthocyanins and have strong antioxidant properties, which can aid in fat synthesis in the liver and help metabolize accumulated fat in the body.



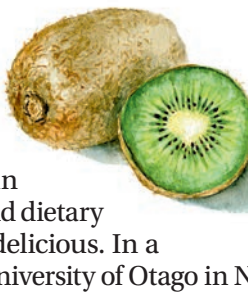
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#### Kiwifruit

Kiwifruit has about 61 calories per 100 grams and is rich in vitamin C, folic acid, and dietary fiber—and is delicious. In a study by the University of Otago in New Zealand, published in the journal Nutrients in 2018, 24 prediabetes individuals between 44 and 85 years of age ate two kiwifruits a day for 12 weeks.

The results showed that the addition of kiwifruit to the diet lowered blood pressure and reduced waist circumference by 1.2 inches.

Wada Kiyoka, a Japanese weight loss expert, noted in an article in 2020 that kiwifruits are about six times more nutritious than apples. The water-soluble food fiber in kiwifruit protects intestinal mucosa, increases intestinal beneficial bacteria, and regulates the intestinal environment.



#### Tomatoes

According to the U.S. Department of Agriculture's FoodData Central, there are only 20.5 calories in 100 grams of Roma tomatoes. Tomatoes are rich in vitamin C, dietary fiber, lycopene, and flavonoids.

The antioxidants in tomatoes reduce the risk of inflammation-related diseases, such as obesity and cardiovascular disease.

A study by Taiwanese researchers, published in Nutrition in 2015, evaluated 25 healthy Taiwanese women who drank about nine ounces of tomato juice, in addition to their normal diet, every day for two consecutive months.

Results of the study demonstrated that supplementation with tomato juice “significantly reduced” the women's waist circumference, body mass index, and levels of serum cholesterol.



#### Melons

Melons come in a variety of types and average 36 calories per 100 grams.

With a low calorie count and high water content, they are a suitable food for weight loss. Melons are rich in potassium, which aids excessive sodium excretion and relieves edema. They are also a good source of copper, potassium, and vitamins C and B6.



### When Is the Best Time to Eat Fruit?

Hanyu said that eating fruit at different times has different benefits:

**Before Meals**  
Eating fruit before meals can increase the feeling of satiety, which is desirable for people on a diet.

**After Meals**  
After a meal, enjoy fruits such as papaya, kiwifruit, and pineapple, which aid digestion to promote metabolism.

**After Workouts**  
Eat fruits rich in organic acids within one hour after a workout to help regenerate glycogen and repair muscles.

People who experience gastroesophageal reflux disease should avoid citrus and high-acidity fruits, as they aggravate the symptoms, and instead eat fruits that are tolerated better, such as bananas, melons, apples, and pears.

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## Easy Exercises to Combat Chronic Pain

### PART III | A THERAPIST'S GUIDE TO PREVENTING CHRONIC KNEE PAIN

Give the most stressed joint in your body the TLC it deserves with some stretches and exercise

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

By Kevin Shelley

Chronic knee pain afflicts millions of people and is the second leading cause of pain in the United States. Whether from injury or regular wear and tear, knee pain can affect your mobility and wreak havoc on your quality of life.

The knee and the hip are two of the most stressed joints in the body, but while hip pain is usually characterized

as dull and aching, knee pain is often sharp and piercing.

"Maintaining healthy knees requires two things: flexibility and strength," Lisa Zaun, a physical therapy assistant and inpatient joint replacement specialist, told The Epoch Times.

Many people find that a regimen of safe, effective, and simple exercises can help keep their knees healthy and free from pain.

#### Common Causes of Chronic Knee Pain

Chronic knee pain is often defined as pain that lasts for more than 12 weeks. Many of the things that cause pain in otherwise healthy knees can be attributed to functional patterns and muscle weakness, Zaun said.

#### Functional patterns

The knee has to endure four pounds of

force for each pound of body weight. Even 30 pounds of additional weight can force the knees to contend with 120 pounds of additional force.

Movements that often lead to chronic knee pain include:

- excessive running or jumping, which can cause considerable compressive forces on the knee
- prolonged kneeling, especially if repeated on a daily basis
- twisting or rotating over planted feet, which stresses the knee joint

#### Muscle Weakness

Knee pain can also originate from muscle weakness, Zaun said. For example, weak muscles are a leading cause of knee injuries, so by strengthening your quadriceps and hamstrings, you'll help the muscles around your knees work

more effectively, providing greater balance and stability.

Thankfully, there are several safe, effective, and easy-to-perform knee exercises that can help strengthen your knees and prevent chronic pain.

**Next Week:** Your ankles absorb a lot of force—if they're weak, you'll be more prone to injuries such as sprains. Ankle exercises can help strengthen weak ankles and prevent painful injuries, while improving your mobility and stability. Strong ankles will also keep you from putting extra strain on your knees and hips.

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.

## THE MUSCLE GROUPS OF THE KNEE

The knee muscles allow four different movements—flexion, extension, medial rotation, and lateral rotation—which are all critical for walking, running, and climbing, as well as helping to maintain balance. Knee muscles are categorized into two major groups: the quadriceps, on the front of the leg, and the hamstrings, on the back.

### Quadriceps

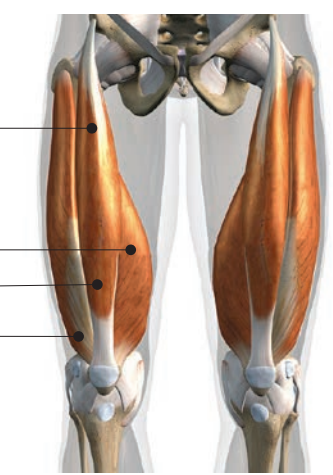
The four key quadricep muscles are:

**Rectus femoris**—attaches to the kneecap and helps straighten the knee and bend the hip.

**Vastus medialis**—runs along the inside of the thigh and connects the thigh bone to the kneecap, helping straighten the knee while stabilizing the kneecap during movement.

**Vastus intermedius**—situated on the front and middle of the thigh, allows extension of the knee.

**Vastus lateralis**—the largest and strongest of the quad muscles, located on the outside of the thigh. It attaches to the base of the kneecap and also helps straighten the knee.



▲ As a whole, our quadriceps all work together to help us to stand up, climb, walk, kick, jump, and run. In sports, they are critical for cycling, running, and squatting movements. They help us to absorb force when our heels hit the ground, flex the hip, stabilize and move the kneecap, and control the way we walk.

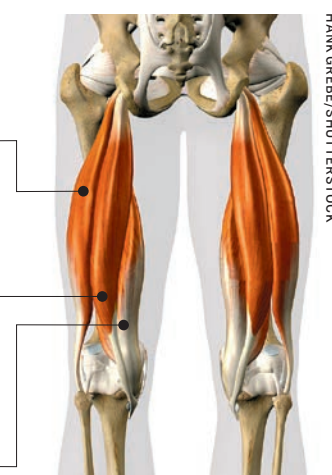
### Hamstrings

The three hamstring muscles are:

**Biceps femoris**—attaches to the top of the tibia (shinbone) and is primarily involved with bending the knee, but also enables hip extension.

**Semitendinosus**—inserts on the upper part of the tibia and contributes to hip extension, internal rotation, bending of the knee, and stabilization of the pelvis.

**Semimembranosus**—inserts on the tibia and is responsible for the extension of the hip, bending of the knee, and internal rotation of the leg.



▲ The hamstring muscles work as a group and allow us to bend our knees, extend our hips, and stabilize our knees during movement. They are highly prone to injury—especially in runners—from a sudden stop or change in direction, or when slowing down.

## EXERCISES TO PREVENT CHRONIC KNEE PAIN

Lisa Zaun recommends bodyweight exercises for strengthening because they are easy to perform anywhere, requiring little to no equipment. When performed properly, these exercises can be both challenging and highly effective. Since the hamstrings and quadriceps work together to provide all knee movement and stabilization during movement, the following exercises are recommended to strengthen both hamstrings and quadriceps:

### 1 STANDING HAMSTRING STRETCH

The hamstring stretch is an excellent way to decrease hamstring tightness, which will decrease tension in the back and knees.

- Step 1:** Place your leg on a bench or chair while standing.
- Step 2:** Keep the leg straight and slowly bend forward while keeping your back straight until you feel a stretch on the back of your thigh.
- Step 3:** Hold the stretch for 10 to 15 seconds, then slowly release. Do five stretches with each leg, alternating legs.



### 2 STANDING QUAD STRETCH

Tight quadriceps muscles can affect how you stand, walk, and sit and can lead to knee pain. This stretch allows you to keep the quadricep muscles stretched and loose.

- Step 1:** Using a chair or counter for stabilization, bend one of your knees and grab your ankle or foot with the hand on the same side.
- Step 2:** Pull slowly until you feel a stretch in the front of your thigh.
- Step 3:** Hold for 10 to 15 seconds, easing into the stretch, then slowly release. Repeat five times with each leg, alternating legs.

Like with the hamstring stretch, don't be too aggressive. Ease into the stretch slowly and listen to your body while avoiding pain.



### 3 WALL SQUATS

Weak quadriceps can allow the kneecap to fall out of alignment during walking, running, and bending. Wall squats strengthen your quadriceps, providing greater control of the kneecap. For best results, place a large exercise ball behind your back to help reduce friction and make this exercise easier.

- Step 1:** Lean against an unobstructed wall while standing.
- Step 2:** Walk your feet out far enough forward that your knees do not move past your toes when you squat.
- Step 3:** Slide yourself down the wall until your knees are almost at a 90-degree angle, then push yourself back up using both legs.
- Step 4:** Complete 10 to 30 repetitions per set; try to do two sets.

Don't bounce, and don't rush the movements. Take one second to move in either direction. Avoid going too low early on, and squat down only as far as you can while still being able to push back up into a standing position.



### 4 WALL SQUATS WITH BALL SQUEEZE

This modification of the basic wall squat still works the quadriceps but with a specific focus on your vastus medialis, which plays the most critical role in controlling the kneecap during movement. This exercise is recommended once you've mastered the basic wall squat.

- Step 1:** Lean against an unobstructed wall while standing.
- Step 2:** Place a ball between your knees—an inexpensive playground ball is perfect for this exercise.
- Step 3:** Begin performing wall squats while tightly squeezing the ball between your knees.
- Step 4:** Complete 10 to 30 repetitions per set; try to do two sets.

This exercise can be considerably more fatiguing than basic wall squats, so do what you can at first and increase as possible.

### 5 GOOD MORNINGS

The hamstrings are often overlooked when exercising, and weak hamstrings can both decrease alignment and increase the negative effects of biomechanical forces on the knee. This exercise is easy and specifically strengthens the hamstrings.

- Step 1:** Stand up tall with your feet spread shoulder-width apart with your hands behind your head and elbows straight out.
- Step 2:** Slowly bend forward while keeping your legs and back straight. Move as far as you comfortably can, until you reach 90 degrees of hip flexion, then slowly come back up. Don't rush the movements, which will protect your lower back. You may only be able to comfortably move a few inches at first, which is fine.
- Step 3:** Do 10 to 20 reps; try to do two sets at first.

Zaun recommends this simple exercise to build stronger hamstrings and increase knee stability.

A little care goes a long way when it comes to your knees. Performing these simple exercises at least three times per week can help you strengthen the muscles of the upper legs and help to keep your knees pain-free.





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SLEEP WELL

# Reset Your Circadian Clock With 2 Habits

Aligning our metabolism with the cycle of the sun and sleep

Continued from Page 1

Circadian enhancement through diet and light exposure offers a non-pharmaceutical way to address sleep issues. The consequences of light exposure and time-restricted eating also extend far beyond getting a good night of sleep. The entire body benefits when a cascade of biological processes are reset to their proper timing.

## What Is Circadian Rhythm?

Our 24-hour circadian rhythm includes physical, mental, and behavioral changes influenced by light and darkness. Nearly every tissue and cell in the body contains a gene that regulates timing. This biological clock is also found in animals and plants.

The discovery of this gene prompted a Nobel Prize in 2017 for the researchers who found it. They discovered that it produces a protein that builds up in cells overnight and then breaks down during the day. This mechanism has a significant influence on sleep, cognitive function, and more. It doesn't just work at a cellular level though. Just as our cells make up larger tissues, including organs and cellular-based activities such as inflammation, so, too does this gene influence larger processes and systems.

There is also a master clock in the brain—about 20,000 neurons that form the suprachiasmatic nucleus (SCN)—that works to keep all the clocks synched at the right time. Much like a car needs a crankshaft to move engine pistons in perfect timing, the SCN requires light to coordinate all these complicated tasks. The input of light relies on our eyes, but it's independent of our sight. All it needs is the retina—a bridge between light and the SCN.

The retina has photosensitive rods and cones, but a more recently discovered third class of photosensitive cells was found in observations of blind people. It turns out that it's unnecessary for the eye to perceive light or images to communicate circadian rhythm to the body. These intrinsically photosensitive retinal ganglion cells influence the synthesis of our sleep hormone melatonin, as well as other circadian behavior, and light reflexes.

## Why Our Circadian Clock Matters

In 2019, the International Agency for Research on Cancer concluded that shift work is most likely a human carcinogen. That brought up questions about the overall detrimental effects for anyone who is living out of sync with his or her own chronotype, or his or her body's preferred sleep-wake cycle.

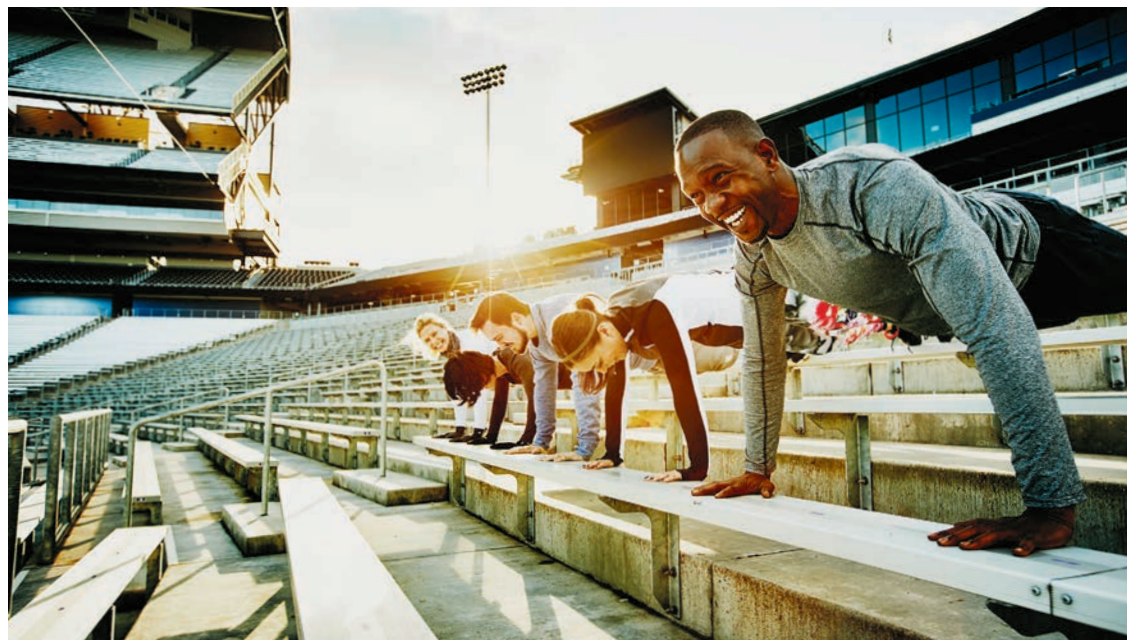
"There are studies out there that have shown that just two nights of not getting enough sleep can start to almost make people look prediabetic," Broussard said. "In those studies, we took healthy young people and did that. The studies haven't been done in older adults mostly because there's this concern you might push people over the edge and elicit too strong a response."

Researchers want to know if certain behaviors can be leveraged to overcome the health deficits of living misaligned with the Earth's clock or whether lifestyle choices could improve the afternoon lag common in seniors that sends them to bed early and wakes them prematurely.

**When you stop eating and let the belly empty itself, you send a powerful signal to the body that it is time to sleep.**

A 2021 review in *The Journal of Clinical Investigation* shows that light exposure, time-restricted eating, and melatonin may help with sleep, as well as improve neurologic, psychiatric, cardiometabolic, and immune disorders. Broussard's lab aims to do research on the synergistic effects to see if they can enhance the circadian rhythm.

"There's this understanding that the strength of the rhythm is associated with beneficial health and cognitive outcomes, and if we can strengthen that, that would be beneficial for people," Broussard said. "We really want to do a study in older adults in the real world."



## The Timing of Eating

A major part of the sleep-wake cycle is when we eat, because that communicates to the body that it will need energy for wake-cycle activities. Food fuels us, but a wake cycle filled with mindless eating can be disastrous. This burdens the pancreas with making insulin, which can lead to insulin resistance as well as mixed signals being sent to the circadian clock.

This is why late-night snacking is particularly vexing. Eating tells the body there is work to do. So does light.

"There's a circadian rhythm to almost all physiological processes," Broussard said. "When the light comes up ... the body's parts are anticipating you'll be active and eating, so systems are ready to go."

Ideally, breakfast should be eaten within an hour of waking, and all eating should cease eight to 12 hours later. This is based on mice and human research, she said.

"Most of the research suggests the earlier side is when your body is expecting food intake," Broussard said.

When you stop eating and let the belly empty itself, you send a powerful signal to the body that it's time to sleep. When the body isn't digesting food, it moves into repair and regeneration mode, an entirely different set of cellular processes that amount to cleaning up the factory after all the workers have gone home for the day. We now call this habit of intentionally limiting our eating to certain times "intermittent fasting" or "time-restricted eating."

"One of the reasons time-restricted eating works is that when you eat dinner much earlier, you sleep better. All your neurotransmitters and hormones work better," Dr. Steven Park,

author of the Amazon bestseller "Sleep Interrupted," told *The Epoch Times*. "You want to go to bed on an empty stomach."

This habit also cuts down on insulin production, which improves glucose metabolism and insulin reaction.

This practice may also help with weight loss, which, along with better insulin regulation, can deliver profound health improvements to those suffering from or at risk of diabetes.

## The Power of Light

Perhaps the most striking evidence of the circadian rhythm's sensitivity is how rapidly it can respond to light. Similar to how butterflies rely on sunlight to warm their wings for morning flight, our bodies rely on sunlight to stir billions of cells into action.

Researchers found that circadian rhythm quickly adjusted to daylight—when people were actually exposed to it.

One of the challenges with modern life is that our indoor environment cuts us off from the natural cycle of sunlight. An experiment published in 2017 in *Current Biology* removed that obstacle by putting participants outdoors for a weekend of camping.

Researchers found that the campers quickly achieved an earlier circadian rhythm, preventing the typical weekend circadian sleep delay, which contributes to social jet lag on Monday mornings. Social jet lag is the mismatch between biological and social timing. Basically, your body hasn't fired up enough to deal with the day's work and social activities. Campers received four times the bright light exposure compared to what they would get in a typical home and work environment.

We can't all live in tents, but Park said that a simple bright light (10,000 lux) can be used to train the body to get back on track after circadian disruptions. To do so, take note of when you notice a trend in tiredness, say at 6 p.m. every day. Sit in front of the light—not necessarily looking directly at it—for 15 to 20 minutes about an hour before then (at about 5 p.m.) to help extend bedtime to a more normal hour.

Using this as a daily habit, along with morning light exposure, can shift the sleep-wake cycle later for those older adults who feel exhausted by 8 p.m. but then end up waking at 3 or 4 a.m. They would use the artificial light at 7 p.m. to give them a boost and hopefully keep them awake for longer.

"Sunlight itself has a beneficial effect on your circadian rhythm every morning, but another thing it benefits is vitamin D. Most people don't have enough vitamin D," Park said.

Vitamin D is a vital immune-boosting hormone that's created from the sun's ultraviolet rays being absorbed into the skin. Also, the near-infrared rays from the sun penetrate the body up to three inches and stimulate the cells' mitochondria to make melatonin, which aids in sleep and also has an anti-inflammatory effect. Supplementing with melatonin may help those who struggle to sleep at night, but Park said that only 1 to 2 milligrams are needed.

## Better Sleeping Advice

Since 2018, there's been a blood test that can determine your biological clock with an accuracy of within 90 minutes. For instance, it can tell you if your body is geared to go to sleep at some time in the range of 1 a.m. to 2:30 a.m., while you actually want it to be set for a bedtime of closer to 10 p.m.

You can likely tune into this yourself by simply tracking when you start to feel really tired each night. This knowledge can offer helpful insight for those suffering from related disorders so that they can enhance their natural rhythm and figure out the best timing for medication, meals, and light exposure.

And sometimes, simply forcing yourself to "go to bed earlier" to fit into an idealized circadian rhythm is actually bad advice, Broussard said. Instead, she advocates creating the sleep schedule that works best for your life or rearranging your life around your ideal sleep schedule.

"Everybody knows what their preferred sleep schedule is. Let go of the guilt of sleeping in," she said. "Most people are of a later chronotype ... There's this judgment that you're lazy if you sleep in and you're morally superior if you wake up earlier."

Part of precision medicine is to give people permission and agency to do what's best, Broussard said. That might mean letting go of the notion that only the early bird gets the worm.

## ENVIRONMENTAL TOXINS

# Herbicide May Be Linked to Sexual Dysphoria: RFK Jr.

The atrazine issue: The gender-bending effects of a common herbicide

Continued from Page 1

It was published in March 2010 in the *Proceedings of the National Academy of Sciences*.

The study noted that atrazine is one of the most commonly used herbicides in the world, as well as the most commonly detected herbicide contaminant. It taints ground, surface, and drinking water and can travel via rainfall more than 620 miles from its application site.

The authors stressed that the herbicide is a potent endocrine disruptor, even at low levels. Previous studies showed adverse effects that included hermaphroditism, reduced testicular volume, and lowered testosterone. The herbicide is also associated with both the demasculinization and feminization of male amphibians.

The study examined the long-term effects of atrazine on reproductive function in a genetically male population of African clawed frogs.

The male frogs were exposed to 2.5 parts per billion (ppb) of atrazine starting when they were tadpoles and continuing for up to three years after they metamorphosed into adults.

Ninety percent of the atrazine-exposed males appeared male, but suffered from depressed testosterone, decreased breeding gland size, decreased sperm production, feminized laryngeal (vocal) development, suppressed mating behavior, reduced spermatogenesis, and decreased fertility.

## Functionally Female Frogs

Significantly, after exposure to atrazine, 10 percent of the genetic males developed into fully functional females with ovaries and viable eggs.

Two of the male-turned-female frogs were mated with control males and produced offspring. Further testing confirmed that these atrazine-exposed male frogs, although now functionally female (having undergone complete feminization) were, in fact, still chromosomal males.

In a 2018 keynote presentation, Hayes explained that exposure to atrazine induces the activation of an enzyme called aromatase. That enzyme converts androgens, which are involved in male sexual development, to different forms of the female hormone estrogen. In the atrazine-exposed frogs, aromatase converted testosterone into estrogen, leading to the feminization of male frogs.

According to Hayes, mammals—including humans—will not have the same extreme egg-producing reaction as some reptiles and amphibians do when exposed to atrazine. However, he noted that aromatase induced by atrazine exposure promotes breast cancer and prostate cancer.

## Big Pharma, Big Herbicides

In fact, aromatase is so important as a cause of breast cancer that one of the leading treatments for breast cancer is a non-steroidal aromatase inhibitor called Letrozole, Hayes said.

The developer of Letrozole is pharmaceutical giant Novartis AG.

Interestingly, in a 2003 toxicological profile, the Agency for Toxic Substances and Disease Registry (ATSDR) lists Novartis Crop Protection Inc. as one of six companies registered to produce products containing atrazine.

Novartis Crop Protection was an affiliate of Novartis AG. In 2000, Novartis spun off its Crop Protection and Seeds sectors, merging them with AstraZeneca Agrochemicals to form Syngenta. To

day, Syngenta is the chief manufacturer of atrazine, according to the Center for Food Safety. Syngenta was acquired by ChemChina in 2017.

Another study that Hayes mentioned in his presentation was published in *Environmental Health Perspectives* in 1997. It found that Kentucky women who were exposed to well water with medium to high levels of atrazine had a statistically significant increase in breast cancer risk, as compared with women who did not drink the contaminated well water.

The study notes that "the results suggest a relationship between exposure to triazine herbicides and increased breast cancer risk, but conclusions concerning causality cannot be drawn, due to the limitations inherent in ecologic study design."

Per the EPA's website, atrazine is chemically related to two other herbicides, simazine and propazine, which together are called triazines.

Hayes emphasized that his study was not a singular study, but rather a comprehensive body of research.

In fact, 22 independent researchers from several different countries have examined the effects of atrazine exposure on various species including fish, reptiles, amphibians, mammals, and birds.

These studies consistently reported similar findings, including the absence of sperm production, demasculinization, and feminization as a result of atrazine exposure, he said.

**Atrazine is one of the most commonly used herbicides in the world, as well as the most commonly detected herbicide contaminant.**

The 22 scientists consolidated their data, publishing it in a paper titled "Demasculinization and Feminization of Male Gonads by Atrazine: Consistent Effects Across Vertebrate Classes" in October 2011 in *The Journal of Steroid Biochemistry and Molecular Biology*.

## Known Harms Reported by US Agencies

In 2003, seven years before the study by Hayes, a detailed toxicological profile of atrazine was issued by the ATSDR, which is part of the Department of Health and Human Services.

The report cited studies indicating that atrazine affects health in several ways: "One of the primary ways that atrazine can affect your health is by altering the way that the reproductive system works."

"Atrazine has been shown to cause changes in blood hormone levels in animals that affected the ability to reproduce. Some of the specific effects observed in animals are not likely to occur in humans because of biological differences between humans and these types of animals. However, atrazine may affect the reproductive system in humans by a different mechanism.

"Atrazine also caused liver, kidney, and heart damage in animals; it is possible that atrazine could cause these effects in humans." However, the report stated that this possibility had not been studied.

## 72 Million Pounds a Year

The report noted the widespread use of atrazine in the United States, although it is a restricted-use herbicide, meaning

that it is not available to the general public.

An Environmental Protection Agency (EPA) memorandum on the use of atrazine, published in July 2022, noted that the herbicide is registered for use in agricultural crops, including field corn, sweet corn, sorghum, sugarcane, macadamia nuts, and guava. It is also registered for non-agricultural uses, such as in nursery or ornamental plantings, turf, and rights-of-way (excluding roadsides). The memo noted that field corn, sweet corn, sorghum, and sugarcane are the most important agricultural use sites for the chemical.

Between 2013 and 2017, an annual average of 72 million pounds of atrazine was used in agriculture.

The ATSDR report stated that atrazine has the potential to be carried through the air or be washed away from the soil by rain, ultimately finding its way into nearby streams, lakes, and other waterways. Moreover, it can penetrate deeper layers of soil and contaminate groundwater. Additionally, plants growing in these areas can absorb atrazine.

Once atrazine enters streams, waterways, or groundwater, it tends to persist for extended periods because of its slow breakdown in water.

According to a June 2023 Market Watch report, the global atrazine market size was estimated to be worth \$1.917 billion in 2022. It's forecast to grow to \$2.343 billion by 2028.

## EPA's 2021 Biological Evaluation

In November 2021, the EPA issued the finalized version of its Biological Evaluation of the herbicides atrazine, glyphosate, and simazine, examining the potential risks to endangered and threatened species from these herbicides.

The assessment was conducted as part of a legal agreement between the Center for Biological Diversity and the EPA.

The evaluation found that all three herbicides are "likely to adversely affect" species listed under the Endangered Species Act, or their designated habitats.

The EPA announced in 2021 that atrazine and simazine are prohibited in Hawaii, Alaska, and the U.S. territories.

Additionally, atrazine will no longer be used "on roadsides, Conservation Reserve Program land, conifers, including Christmas tree plantings, timber and forestry areas, and miscanthus and other perennial bioenergy crops," according to the EPA release.

A Syngenta representative, responding to questions from *The Epoch Times*, said that the herbicide was primarily used to control weeds in corn, sorghum, and sugar cane crops.

"Herbicides are crucial tools for helping farmers manage weeds and significantly increase crop yields while decreasing the amount of tillage, which prevents soil erosion and greenhouse gas emissions, and improves water and wildlife habitat," the representative said.

"Atrazine has been extensively studied over the past 50 years. Nearly 7,000 studies have concluded it is safe for humans and the environment and it has been approved by international organizations and governments around the world."

*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.*



▲ In animal studies, atrazine induced hermaphroditism, demasculinization, and feminization, raising questions about what it could be doing to people.

**\$2.343 BILLION**

► The atrazine market is forecast to grow to \$2.343 billion by 2028, according to a June 2023 Market Watch report. The current global atrazine market was estimated at \$1.917 billion in 2022.

▲ Atrazine is primarily used in agriculture, especially to prevent weeds in corn fields, sorghum, and sugarcane.



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Prolific in the garden and a potent component of a natural first-aid kit, the healing power of peppermint oil has been documented as early as 1550 B.C.

## HERBAL FIRST AID

# Treat Acute Injuries With Natural Medicine

### PART III PEPPERMINT FOR NAUSEA, HEADACHE, CONSTIPATION, AND MORE

This herb has been used therapeutically since ancient times, and research reveals why



➔ **In this series, "Herbal First Aid Kit,"** we look at natural alternatives to modern first aid kits, which usually consist of medications made from synthetic chemicals. If you are looking for natural solutions for acute conditions, these herbs are safe, effective, and easily available.

**Previously:** *Plantago major* grows all over North America and often considered a "weed" even though it's an essential herbal remedy.

◀ Peppermint oil can be inhaled to relieve nausea or applied topically to relieve headaches.

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#### MICROBIOME

## Gut Bacteria Key to Early Alzheimer's Detection: Study

New research could make early treatments possible and change the course of Alzheimer's

By Amy Denney

It may soon be possible to learn whether someone has Alzheimer's disease before they show symptoms by examining the bacterial makeup in their intestines, according to a Washington University School of Medicine study.

Published June 14 in *Science Translational Medicine*, the study looked at the gut microbiome community, called the microbiome, of 164 participants. Markedly different bacterial species were found in 49 participants, who were deemed at higher risk of developing dementia based on brain scans and cerebrospinal fluid.

Previous studies have made the connection between dysbiosis, or imbalance, of the gut microbiome and Alzheimer's disease, though research

remains unclear on whether a shift in the microbiome causes the disease or if the disease leads to a change in the bacterial composition. However, the new findings support that measures can be taken to delay symptom onset.

"By the time people have cognitive symptoms, there are significant changes that are often irreversible," Dr. Beau Ances, neurology professor and co-corresponding author, said in a statement. "But if you can diagnose someone very early in the disease process, that would be the optimal time to effectively intervene with a therapy."

Research suggests that more than a decade before memory and cognitive symptoms appear, complex brain changes are emerging that are associated with Alzheimer's, such as the forma-

tion of amyloid plaques or tau tangles.

This stage happens before dementia, but it doesn't always lead to dementia. The National Institutes of Health has classified this stage as preclinical. There are also mild, moderate, and severe categories of dementia.

All study participants were cognitively normal and provided stool, blood, and cerebrospinal fluid samples; kept food diaries; and underwent PET and MRI brain scans.

#### Detecting Dementia

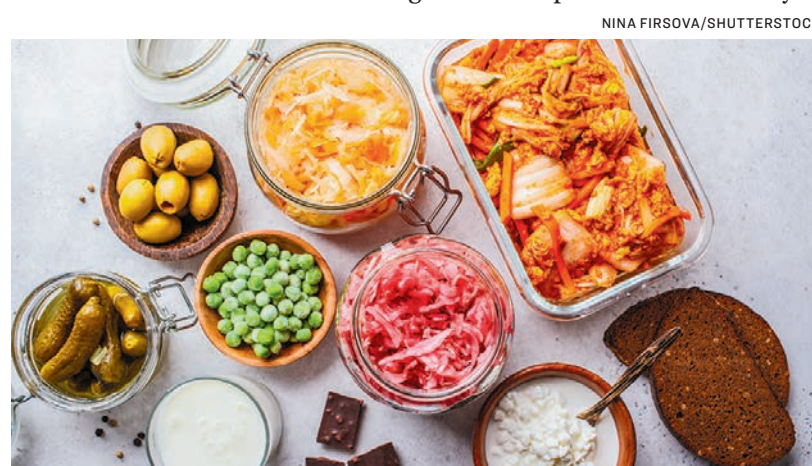
Only in the past two decades can biomarkers of the disease be detected in a living person, typically through a battery of tests. Blood tests alone can't be used to diagnose

Alzheimer's, which was previously diagnosed only through autopsies.

Blood tests measure levels of beta-amyloid, a protein that accumulates abnormally in the brains of people with Alzheimer's. These tests should be used in conjunction with other tests, such as imaging.

To distinguish participants already in the early stage of Alzheimer's disease from those who were healthy, the researchers looked for signs of amyloid beta and tau accumulation through brain scans and cerebrospinal fluid.

"The nice thing about using the gut microbiome as a screening tool is its simplicity and ease," Ances said. "One day, individuals may be able to provide a stool sample and find out if they are at increased



Research suggests that eating probiotic foods with "good" bacteria may reduce the risk of Alzheimer's.

NINA FIRSOVA/SHUTTERSTOCK

LIUDMILA CHERNETSKA/GETTY IMAGES

Two minutes after inhaling peppermint oil, the average nausea rating dropped significantly, to 1.44.

#### Constipation

When I experience constipation, I reach for peppermint instead of MiraLAX.

Enteric-coated peppermint oil capsules were reported as safe and effective in the treatment of irritable bowel syndrome, according to a study in the *Journal of Gastroenterology*. According to the study, 79 percent of adult patients who consumed the capsules three or four times daily, 15–30 minutes before meals for one month reported an alleviation of the severity of abdominal pain, 56 percent were entirely pain-free, and 83 percent reported less abdominal distension.

While peppermint is a natural plant remedy, MiraLAX contains polyethylene glycol 3350, which is derived from fossil fuels.

#### When to Use Peppermint

Peppermint has been shown through scientific studies to be useful in the following ways:

- Headache relief
- Pain reduction
- Increased alertness
- Decreased anxiety & fatigue
- Relief from nausea
- Relief from constipation
- Relief from coughing
- Improved sleep

#### Headaches

When experiencing a headache, I reach for peppermint instead of aspirin or acetaminophen (Tylenol).

While man-made drugs are commonly believed to be "more effective" than natural medicine, the scientific research suggests otherwise.

Local topical application with peppermint oil is effective in treating tension headaches, the most common form of headache. In fact, studies have shown that peppermint oil is as effective at relieving tension headache as acetylsalicylic acid (aspirin) and paracetamol (acetaminophen).

While peppermint is a natural plant remedy, aspirin can contain synthetic ingredients such as carnauba wax, D&C yellow #10 aluminum lake, polysorbate 80, propylene glycol, and triacetin.

#### Nausea

When experiencing nausea or motion sickness, I reach for peppermint instead of Dramamine or Gravol.

A study published in the *Journal of Nursing* in 2016 concluded that "peppermint oil inhalation is a viable first-line treatment for nausea in postoperative cardiac surgery patients." Post-surgery, 34 patients experienced nausea with an average nausea rating of 3.29 on a scale of 0 to 5, with 5 being the greatest nausea.

skin where needed. For example, to relieve a tension headache, apply diluted peppermint essential oil to the temples and back of the neck. For constipation, apply to the abdomen.

#### Diluted Peppermint Essential Oil

Add three drops peppermint essential oil to two teaspoons organic fractionated coconut oil. I add the oils to a glass essential oil roller bottle for ease of application, but a glass bottle with an eye dropper works well too. Simply apply the diluted essential oil to your

skin where needed. For example, to relieve a tension headache, apply diluted peppermint essential oil to the temples and back of the neck. For constipation, apply to the abdomen.

#### Peppermint Aromatherapy

Add two or three drops peppermint essential oil to a vaporizer or diffuser and enjoy the minty aroma. For a relaxing bath, add a couple of drops of essential oil directly to the bathwater. Alternatively, add a few

drops to distilled water in a spray bottle and spritz your home, car, or office.

#### Peppermint Capsules

Peppermint capsules can be made at home or purchased. Enteric-coated capsules are commonly recommended to prevent the capsules from breaking down before reaching the intestines. This helps reduce the likelihood of unwanted side effects, such as heartburn.

Follow the dosage recommendation on the product label or ask your doctor for a recommended dosage. Peppermint oil is reportedly safe at a dosage of 0.2–0.4 milliliters of oil three times per day in enteric-coated capsules for adults. (one drop is about .05 milliliters.)

### Peppermint leaves have been found in Egyptian pyramids dating back to 1,000 B.C.

#### A Word on Peppermint Quality

Not all peppermint essential oil is created equal. To decrease costs, essential oils are sometimes adulterated by adding a similar but cheaper oil or diluting the natural oil with various solvent oils.

In 2023, *ConsumersAdvocate.org* tested 11 peppermint essential oils samples and reported that four were adulterated. Identifying an adulterated essential oil can be tricky because it may smell like an unadulterated essential oil, but the quality and effectiveness are likely diminished.

When choosing an essential oil, I purchase only products that are organic, do not contain additives or synthetic chemicals, and have been tested for heavy metals, microbes, and glyphosate.

#### Precautions

Pregnant or breastfeeding women should consult their health care provider before consuming mint. Peppermint may interact with some prescription drugs, such as cyclosporine, acid-reducing medications, ulcer medications, calcium channel blockers, and other drugs used for hypertension or high blood pressure. People with a hiatal hernia, gastroesophageal reflux disease (GERD), diarrhea, or a condition that causes the stomach to not produce enough acid should consult with a health care provider before consuming mint. Peppermint oil is contraindicated in children under 2 years of age. Avoid contact with eyes, inner ears, and sensitive areas.

**Next Week:** Frankincense is one of the world's most important and well-known natural remedies—for good reason.

*Dr. Sina McCullough is the creator of the online program, "Go Wild: How I Reverse Chronic & Autoimmune Disease," and author of "Hands Off My Food," and "Beyond Labels." She has a doctorate in nutrition from the University of California-Davis. She is a master herbalist, Gluten Free Society certified practitioner, and a homeschool mom of three.*

the link would be inflammatory," said co-corresponding author Gautam Dantas, professor of pathology and immunology, biomedical engineering, molecular microbiology, and pediatrics.

"Bacteria are these amazing chemical factories, and some of their metabolites affect inflammation in the gut or even get into the bloodstream, where they can influence the immune system all over the body," he added. "All of this is speculative at this point, but if it turns out that there is a causal link, we can start thinking about whether promoting 'good' bacteria or getting rid of 'bad' bacteria could slow down or even stop the development of symptomatic Alzheimer's disease."

Most people have some "bad," or pathogenic, bacteria in their guts, and scientists are trying to figure out what an ideal microbiome is.

Research suggests eating probiotics regularly helps establish a healthier bacterial balance. Probiotics, found in food and supplements, are health-promoting bacteria.

Harvard Health Publishing pointed to two promising studies: one showing that milk with four probiotic strains may help improve cognitive scores in Alzheimer's patients and one indicating that yogurt consumption helped women react more calmly to irritating stimuli.

JORDI SALAS/GETTY IMAGES



▲ Walking and engaging in regular physical activity may also help fight inflammation in the body.

#### INFLAMMATION

## Simple Steps to Keep Inflammation in Check

This overactive immune response can contribute to countless health issues if left unaddressed

By Mat Lecompte

What do a mattress, a toothbrush, salmon, and sneakers have in common?

They may all be able to help you fight chronic inflammation—a persistent state of immune system activity that's linked to several health problems and risks. The more healthy habits you have, the better chance you'll have at limiting inflammation and disease risk.

Inflammation is one of the body's key defenses. It happens when you get injured or become infected by a microbe and your body sends out inflammatory immune cells to attack, isolate, and repair. But sometimes, lifestyle habits keep this immune response going, and it can impair healthy tissue and wear the body down.

Fortunately, certain lifestyle habits can calm inflammation. A healthful diet, regular exercise, sound sleep, good oral health, and relaxation can all help keep inflammation in check.

#### Eat Fatty Fish Twice Weekly

Two servings of fatty fish per week are linked with better long-term health and lower levels of inflammation. Salmon, anchovies, halibut, sardines, and tuna contain omega-3 fatty acids that disrupt the production of chemicals that cause inflammation.

#### Get a Comfortable Mattress

Is your mattress making you toss and turn through the night? Even one night of disturbed sleep can increase inflammation. Further, regularly missing sleep can contribute to obesity, which is also linked to inflammation.

Even if your mattress is good, look at other ways to improve sleep, such as minimizing food intake in the evening, relaxing before bed, and setting a sleep schedule.

#### Brush Your Teeth Regularly

Brushing twice daily and flossing once a day can help eliminate bacteria that lead to infection and causes inflammation elsewhere in the body.

#### Go for a Walk

Aerobic exercise—such as walking, jogging, cycling, and dancing—is a great way to fight inflammation. It may also help produce hormones that keep inflammation in check.

### Two servings of fatty fish per week are linked with better long-term health and lower levels of inflammation.

#### Lower Stress

Chronic stress promotes inflammation and is linked to several chronic inflammatory conditions, such as rheumatoid arthritis and cardiovascular disease. Deep breathing, yoga, and simply enjoying more downtime can help.

*Mat Lecompte is a freelance health and wellness journalist. This article was first published by Bel Marra Health.*

## RELATIONSHIPS

# Deepen Every Relationship With One Skill

In our age of isolation and distraction, being a great listener becomes a powerful and precious attribute

By Zrinka Peters

There seems to be a deficit of social skills in our post-COVID-19 world. We may have become more adept at digital communication in the past few years, but we're less comfortable with face-to-face interaction.

Media outlets have noted the problem, with stories reminding us that "We're All Socially Awkward Now." But we can't blame the pandemic alone. Research indicates that a decline in in-person interactions has actually been happening for years, in tandem with a steady increase in online communications.

The pandemic, with its forced isolation and rapid shift to online work and school, intensified this change. And our social skills, which need to be practiced in order to stay sharp, took a hit. A Tokyo-based research company surveyed thousands of college students between 2019 and 2021 and compared their social skills between their freshman and junior years. They found that the students' ability to build good relationships, cooperate with others, and exercise patience all decreased over that time.

Our social skills may have atrophied, but they are still vital to our health and happiness—both as individuals and as communities. We are social creatures at heart. Communication is a two-way process of talking and listening, but the quieter side is rarely taught and easily neglected. Sharpening our listening skills is an effective—and gentle—way to grow our communication skills and our ability to meaningfully connect with others.

It has important consequences. There are few things in life as meaningful as being heard. This means that if you can listen well, you can give people a gift that has tremendous value.

Most of us tend to focus on what we want to say, and we take listening for granted. Not only that, but almost all of us think our listening skills are above average. Scott D. Williams, a professor of management at Wright State University's Raj Soin College of Business, writes in his Leader Letter to graduate students: "Almost everyone sincerely believes that he or she listens effectively. Consequently, very few people think they need to develop their listening skills. But, in fact, listening effectively is something that very few of us do."

Listening is at the heart of any good relationship, and putting some effort into it can deepen each interaction we have with our spouse, our children, or our colleagues. People want to be heard. A

Our social skills may have atrophied, but they are still vital to our health and happiness—both as individuals and as communities.

Listening skills can be developed through practice.

By actively listening, we convey to others that we value their thoughts, which strengthens our relationships and builds trust.

Asma Rehman, licensed professional counselor



Most of us tend to focus on what we want to say, and we take listening for granted.

study published in the September 2015 edition of the journal *Social Neuroscience* found that the perception of active listening actually activates the brain's reward centers, and study participants rated both their interactions and their evaluators more positively when those people practiced active listening.

On the other hand, most people—even children—are quick to pick up on signs that the person they're talking to is really focused on something else, like the latest notification that just popped up on their phone. "Active listening" refers to giving the person you are listening to your full attention and showing due attentiveness. It makes the other person feel valued and heard. It's an important skill not just for therapists and counselors, but for all of us.

Active listening can permeate every aspect of our lives, said Asma Rehman, a licensed professional counselor and the founder and director of the Grief Recovery Center in Houston.

"By actively listening, we convey to others that we value their thoughts, which strengthens our relationships and builds trust. Moreover, understanding others' perspectives enhances our communication skills, leading to more fruitful conversations," she told *The Epoch Times*.

But how do we do it? After all, we are bombarded with distractions at every turn. A May 2016 study published by the Association for Computing Machinery

tracked the online activity of 40 information workers over two work weeks. It found that the average adult focused on their online activity for only a brief 40 seconds before their attention shifted. A British study tracked the online activity of 200 people over the course of one hour in the evening, and found that the participants switched back and forth between devices (including phones, tablets, and computers) an average of 21 times in that 60 minutes.

When we are so quickly and easily distracted, it takes effort to focus on the person in front of us—but we can do it if we try. Listening skills can be developed through practice.

"It begins with devoting our full attention to the speaker and minimizing distractions," Rehman said.

Good listening starts with not multitasking during conversations. For most of us, that means putting electronic devices fully out of view. A study conducted at the University of Texas at Austin found that simply having a phone in view and within reach—even when it was turned to silent mode—significantly reduced the participants' ability to do well on tests. The researchers concluded that "the mere presence of participants' own smartphones impaired their performance on tasks that are sensitive to the availability of limited-capacity attentional resources."

If we really want to focus our undivided

attention on a conversation with another person, we will put our devices away.

Rehman offered a few more helpful suggestions:

"It's important to focus on the speaker's main points and not get lost in minor details. [And] if something remains unclear, don't hesitate to ask for clarification. Summarizing the speaker's points ensures you've understood them correctly. Lastly, responding appropriately can range from giving feedback, offering support, or simply acknowledging the speaker's points."

For many of us, this requires slowing the conversation down and not trying to formulate a response before the other person is finished speaking.

Giving the other person our full attention, and making an effort to really understand what they're saying, not only improves communication but also shows care and respect for the person we're talking with. That's a vital part of every healthy relationship.

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

## MIND-BODY CONNECTION

## Cognitive Dissonance Causes Physical Harm: Study

The pain of our internal contradictions isn't only psychological, researchers warn

By Irina Antonova

Researchers have found real-world evidence that cognitive dissonance can generate pain in the body.

Cognitive dissonance is the psychological discomfort or tension that we feel when there's an inconsistency between our beliefs and our actions, or when we hold two conflicting beliefs or values at the same time.

For instance, we may think that spending more time with our family is important, but then we use our free time after work to scroll through our phones or watch TV. While it may not be at the front of our minds, lurking in the background is an awareness that we aren't acting in accord with our own values.

In a study conducted by researchers at Ohio State University and the University of Michigan and published in the journal *Ergonomics* in February, 17 volunteers—nine men and eight women aged 19 to 44—were instructed to lift lightweight boxes according to a specific method, with the study purportedly intending to monitor their backs for that reason.

But the sensors that had been placed on the participants' backs were actually recording tension in the spine, or spinal load. Although participants were told that they were doing the movements correctly, they were later criticized for doing the work incorrectly.

The wearable sensors and motion-capture technology attached to their backs detected the peak spinal loads in the neck and low back, measuring both compression of vertebrae and vertebral movement—which is also known as shear.

Using the workplace scenario, researchers found that even this simple amount of psychological distress generated pressure on the volunteers' necks and lower backs, with the peak spinal loads on cervical vertebrae in the neck being 11.1 percent higher in compression, 9.4 percent higher in anterior-posterior shear and 19.3 percent higher in lateral shear.

Nothing had changed in the actual work or movements that the participants were doing.

"This increased spine loading occurred under just one condition with a fairly light load," William Marras, executive director of the Spine Research Institute at The Ohio State University and one of the study's authors, told Ohio State University News.

"You can imagine what this would be like with more complex tasks or higher loads."

While cognitive dissonance may seem an abstract problem for the average workplace, workers often find themselves dealing with conflicting personal or company values. For example, workers

may constantly be told that quality is job one, but then they're given so much work that they can't keep up and ensure that quality standards are always met.

### Mind-Body Link for Pain Long Established

Marras's lab has been examining the links between different occupational factors and their effects on the spine for decades. He first discovered that psychological stress could influence spine biomechanics some 20 years ago.

Marras argues that there is a link between cognitive dissonance and spinal health, which has significant implications for health and safety in the workplace, where stress—including that linked to cognitive dissonance—can be overwhelming.

"We ended up finding that when you're under that kind of psychosocial stress, what you tend to do is what we call co-activate muscles in your torso. It creates this tug of war in the muscles because you're always tense," he said.

"Our tolerance to shear is much, much lower than it is to compression, so that's why that's important. A small percentage of load is no big deal for one time. But think about when you're working day in and day out, and you're in a job where you're doing this 40 hours a week—that could be significant and be the difference between a disorder and not having a disorder.

### Cognitive dissonance is the psychological discomfort or tension that we feel when there's an inconsistency between our beliefs and our actions.

Additionally, the study also found that one's personality type can also increase the pressure placed on the spine.

"We found that in certain personality types, the loads in the spine increased by up to 35 percent," Marras said.

### The Pain's Mind-Body Link

The human body's pain perception is the process by which the brain interprets and responds to painful stimuli, which is a complex physiological and psychological phenomenon that involves the transmission and processing of signals from various sensory receptors in the body.

When someone experiences pain, specialized nerve endings called nociceptors detect painful stimuli, such as heat, pressure, or chemical signals. These nociceptors are present throughout the body—including the skin, muscles, organs, and other tissues—and once

activated, they send electrical signals through nerve fibers to the spinal cord and brain.

The brain plays a crucial role in pain perception. The signals from the nociceptors are processed in several brain regions, including the thalamus, somatosensory cortex, and the limbic system, which is involved in emotions and motivation. The brain then integrates the sensory information and generates a subjective experience of pain.

### How to Combat Cognitive Dissonance

The concept of cognitive dissonance was first introduced by psychologist Leon Festinger in the 1950s.

When individuals experience cognitive dissonance, they feel a sense of discomfort, unease, or internal conflict. Ideally, this discomfort motivates them to reduce the dissonance by resolving the inconsistency and restoring a sense of cognitive harmony. To achieve this, people may employ various cognitive and behavioral strategies.

There are a few ways in which individuals typically reduce cognitive dissonance. Some people modify their existing beliefs or attitudes to align with their behavior. For example, if someone smokes despite knowing it's unhealthy, he may convince himself that smoking has fewer risks or downplay the negative consequences.

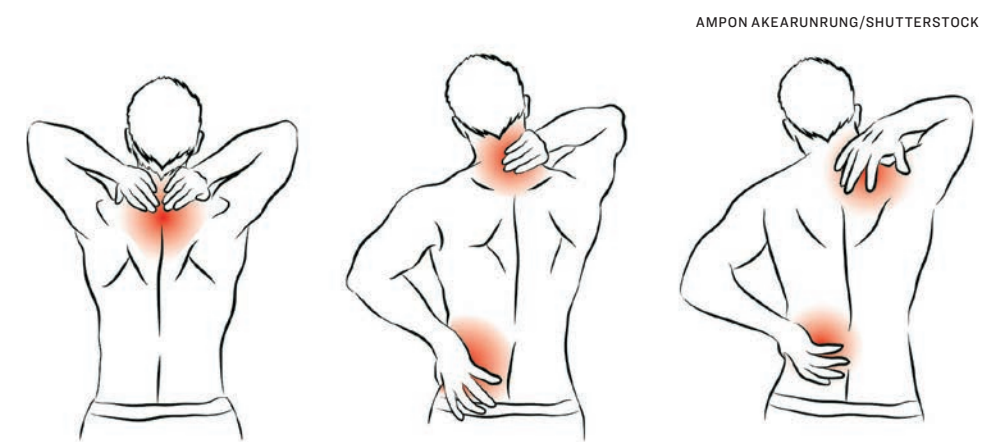
Another way to reduce cognitive dissonance is to acquire new information, so individuals may seek out further information or reinterpret existing information to support their beliefs or justify their behavior. They may selectively focus on information confirming their beliefs and ignore contradictory evidence.

Further, people may alter the importance or value that they attribute to certain beliefs, attitudes, or behaviors. For instance, if someone values her social connections but engages in conduct that isolates her socially, she may convince herself that solitude is more fulfilling or that her social relationships aren't as important as she previously believed.

People also can seek out information or activities that align with their beliefs or behaviors, thereby avoiding situations that may trigger cognitive dissonance.

Finally, people may confront or change situations that create internal conflict for them, and thereby remove the source of dissonance.

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



▲ Researchers have found that certain personalities may be more at risk of suffering from spinal problems.

## INTENTIONAL LIVING

## 7 Reasons to Slow Down During the Summer

Summer gives us an important season to make memories, connect with loved ones, and grow

By Joshua Becker

Almost two decades ago, a mentor gave me a piece of advice that has stuck with me ever since: "Slow down your life, at least a little bit, during the summer months."

This advice was delivered while I was living in Vermont, a place known for its harsh winters and beautiful summers (and gorgeous fall colors). So, it made perfect sense that we'd make a point to enjoy the wonderful weather while it was around.

But while the advice was given in a

specific climate, it resonated with me on a deeper level, and I think it holds relevance for everyone, regardless of where you live.

Even today, living in Phoenix, in the desert, the principle is something I practice: Slow down, at least a little bit, during the summer months.

Summer offers a wonderful opportunity to ease our pace, recharge our batteries, and reconnect with what truly matters. This isn't about completely stopping our work or responsibilities; rather, it's about dialing back, shifting gears, and making room for moments



▲ Summer is a good time to slow down, recharge our batteries, and create meaningful memories with the people we love.

that can enrich our lives.

If you're someone who clocks in long hours at work every week, this advice is particularly for you—especially if you have children at home.

But really, anyone can benefit from the spirit of slowing down—whether by using your vacation days, leaving earlier

in the afternoon, extending your weekend, or just not taking on a new project at work.

Here are seven compelling reasons why we should all embrace a slower summer pace:

### 1. To Enjoy the Good Weather

Let's be honest—the warm weather just calls us to be outdoors.

Research suggests that being outdoors can improve mental health, increase vitamin D levels, and reduce stress. But we can't reap these benefits if we're cooped up indoors working all the time.

### 2. To Connect With Family

Most parents get only 18 summers with their children before they grow up. That's not a lot of time.

Summer offers precious moments to connect with our children, create memories, and strengthen our familial bonds. Some of my most lasting memories with my parents occurred during summer months.

Your children and grandchildren won't be little forever. Make this summer count.

### 3. To Leverage the Longer Days

Summers gift us with more daylight hours, providing the perfect backdrop for relaxed, unhurried evenings.

It's the best time to sit on your porch, ride bikes with family, take a stroll with your spouse, spend time with neighbors,

go get some ice cream, or attend your kids' T-ball game.

Embracing these slower moments can boost our mood and improve our overall well-being.

### 4. To Find a Natural Rhythm to the Year

We're often so engrossed in our work and routines that we lose touch with the natural rhythms of life.

Slowing down in the summer, picking up pace in the fall, taking a short break during the holidays, and then pushing hard through the spring—this cycle mirrors the ebb and flow of nature.

Aligning with this rhythm can bring a sense of balance and harmony to our lives.

### 5. To Reevaluate and Reorient Our Lives

Slowing down creates space for reflection, a chance to evaluate our priorities,

and align our actions with what matters most to us. The typical hustle and bustle of life often leaves little room for introspection.

Slowing down during the summer gives us the opportunity to step back, assess our life's trajectory, and make necessary adjustments.

### 6. To Reconnect With Friends

With vacations and social gatherings, summer is also a great time to reconnect with friends.

These social interactions play a crucial role in promoting emotional health. Sometimes, they are expensive outings, but they don't need to be. Frisbee in the park can be just as rejuvenating as a week on the beach.

### 7. To Learn and Grow

Slowing down a bit during the summer, with its more relaxed pace, offers an

opportunity to invest time in personal growth. This could mean reading that book you've put off, learning a new skill, or even starting a hobby.

By dialing back, we can dedicate a portion of our time to self-improvement that might get neglected during the busier times of the year. And the best part? This learning can occur while we're lounging on the porch, chilling in the backyard, relaxing on vacation, or sipping lemonade with a friend at the park.

So, whether you're a parent eager to create lasting memories with your kids, a hard worker needing a break, or just someone who wants to enjoy the beauty of summer, slowing down could be your ticket to a more fulfilling season.

This summer, relax your schedule and leave plenty of time for sunsets.

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

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