

MIND & BODY

How Herbs Treat Lyme Disease

Research reveals how herbal treatments can succeed where antibiotics fail **2**



Lyme is typically transmitted through a tick bite, but other insects may also carry the disease.

Lyme disease can be difficult to identify and cure but researchers have recently found effective herbal treatments.



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-Minute Dose of Nature Could Cut Your Stress

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While uncertainty can inspire us to hoard, there are better ways to keep our lives flexible, free, and stable.

BECOMING MINIMALIST

Minimalism in a Crisis

Sometimes you need to throw excess cargo overboard to stay afloat

JOSHUA BECKER

There's an old boating safeguard of throwing cargo overboard to lighten the load of the vessel during times of distress. The official word for the cargo cast overboard is jetsam.

The throwing off of unneeded cargo or equipment can help to lighten the vessel, to stabilize it during a storm, or remove flammables during a fire.

I can remember first hearing about this practice when I was kid hearing the old story about Jonah and the whale. But this is a practice that is still used today.

I think the analogy is helpful as we consider minimalism in a crisis—the benefit of removing unneeded cargo from our lives. To be fair, this principle applies to any crisis we may be facing, such as the loss of a job, an illness, or a natural disaster.

But today, allow me to address minimalism during a societal crisis. Specifically, what we're all going through right now trying to make the sense of COVID-19.

One of the problems in looking for security in material possessions is that possessions never provide the security we desire.

There is a reaction that some might have during a crisis to gather as much as possible and hoard as much as they can in their homes. We can see that reaction around us as people run to the grocery store or the pharmacy, grabbing as many things as they possibly can fit in their cart.

But there is an opposite response to this crisis we should consider: throwing off the non-essential cargo from our lives. Rather than hoarding possessions, we could use this crisis to begin removing the ones we do not need to help us find better stability.

Why use this crisis to own less?

5 Important Benefits:

1. Freedom
When we own less, we find more freedom in our spaces and we find more freedom in our life. When our homes are filled with unnecessary possessions, the environment is constricting and frustrating. But as we declutter our spaces, our homes become calmer and more peaceful.

2. Flexibility
Another reason we throw off nonessential cargo is

the flexibility that it provides us going forward. The world is going to change, no doubt about it. Your life is going to change. Normal will be new.

Who knows what tomorrow holds? Who even knows when this storm is going to end? But when we own fewer possessions, we become more flexible for the future—whether we need to move, find a new job, or make changes in the way we live.

3. Financial Stability
As we own fewer possessions, our life costs less. It costs less to maintain our things. Even more importantly, we begin to buy less going forward. Suddenly, it is easier to find financial stability than before.

4. Benefit Others
Another reason to embrace minimalism in a crisis is because it helps us provide goods to those who need it. I realize, at this point in time, different locations have different guidelines in place for donations. But if your local authorities have deemed it safe, this is an important time to help those who desperately need it.

5. Security
One last benefit of throwing off unneeded cargo during a crisis is that we can turn to look for security in places that can actually deliver. One of the problems in looking for security in material possessions is that possessions never provide the security we desire. That's why people start hoarding more and more and more. They believe the added items will help them feel safe, but they never do.

Instead, we can turn to friends and family and faith. We can turn to things that we know to be true about ourselves: our talents, our abilities, our work ethic. When we begin to rely on those things for our security going forward, we begin to find more lasting security in a crisis.

Now, don't mishear me. I'm not saying it is wise to go out tonight and throw away every single thing you own.

What I am saying is this: Whether you are going through a personal crisis or societal crisis, begin to see how owning less can help bring back control of your life. Minimalism will bring intentionality. It can bring freedom and flexibility and financial stability going forward. As you remove items that you do not need, you will be more stable and more equipped to weather any crisis that you may be going through.

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

MUSIC AS MEDICINE

Caught the COVID-19 Blues?

Research shows that music can provide a medicinal antidote to our emotional ailments

JOHN STUART REID

English acoustic-physics pioneer, John Stuart Reid, explains how music medicine can banish the blues (and fear) associated with COVID-19 while boosting our immune system to help vanquish any pathogen.

It's natural to have low spirits (the blues) and to feel fear when we sense that our security or way of life may be threatened.

Fear is nature's way of urging us to take action and, fortunately, nature has evolved a clever system that engages automatically within us to help save us from threats. There's just one little stumbling block: The system was designed for acute fear. Nature, it seems, didn't anticipate chronic fear.

The COVID-19 situation is not the stereotypical saber-tooth tiger from which we can quickly run and hide. We also can't protect ourselves from the associated socio-economic repercussions. And while watching or reading the news keeps us informed of the worldwide crisis, it is also likely to keep us in fear of the invisible viral threat, day after day, week after week. Such chronic fear is potentially harmful because it weakens our immune system (aside from many other bodily harms), rendering us less able to vanquish viruses or other pathogens. Fortunately, there is a simple antidote that uses another of nature's clever systems. This antidote banishes low spirits, eases fear, and boosts our immune system. It's drug-free, has no known side effects, and can't be overdosed.

Music plays a large part in the human experience, and its basic components—sound and rhythm—have always been present on earth.

By way of introducing this magical antidote, it's important to know that the natural human state of fear causes the release of cortisol from the adrenal glands. Cortisol is sometimes called the "stress hormone" because it helps prepare our body for dealing with stressful situations, such as providing extra glucose by tapping into protein stores via gluconeogenesis in the liver. Unfortunately, though, cortisol also suppresses our immune system and other bodily systems considered by nature to be "nonessential" in the short term. By short term, I mean that when running from the proverbial saber-tooth tiger there probably isn't much chance of being invaded by a harmful microscopic organism. Yet, our immune system is our defense against viruses and other pathogens, so its suppression due to feelings of fear should not be ignored, especially if we have an underlying health condition.

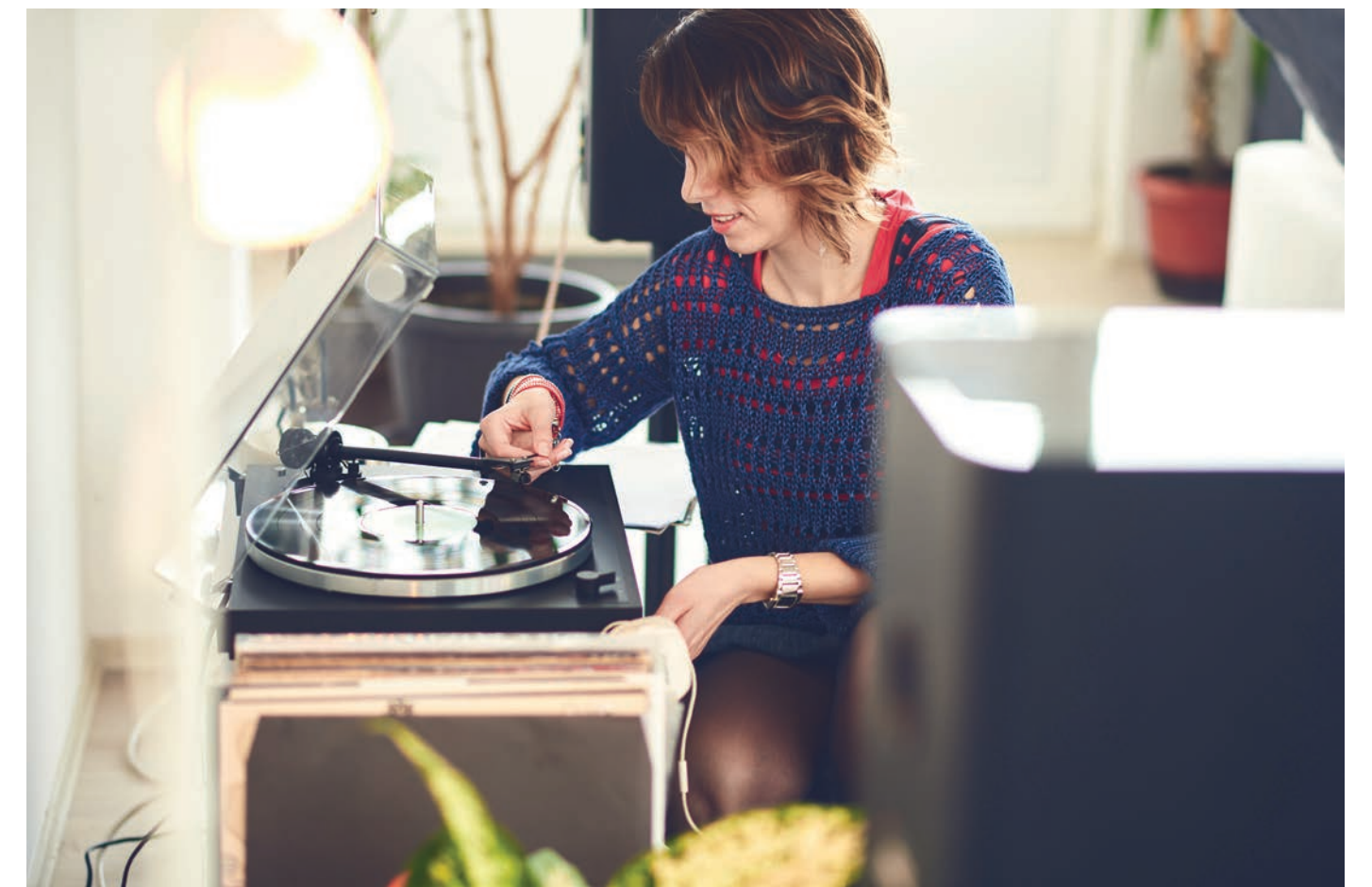
The magical antidote that nature provided for us is music. Not just any music, but music that calms us and brings us joy. Nature's "music" for our ancient ancestors was provided in a variety of ways, such as psithurism (the sound of the wind in the trees and rustling leaves), the sound of birdsong, bees, or tinkling streams, and the sound of our own humming or singing.

Music plays a large part in the human experience, and its basic components—sound and rhythm—have always been present on earth, in wind, and waves, bird calls and endless other forms.

Around 40,000 years ago, humans fashioned flutes made from bird bones and mammoth ivory.

There are many ways to help calm our nerves such as exercise, deep breathing, meditation, all forms of creativity, and dancing. Yet, one of the most powerful antidotes to stress and fear in which we can all engage is listening to our favorite music, or if we are a musician or vocalist, making it ourselves.

And nowhere was this message carried better than from the streets of Italy. Quoting from the United Kingdom's Classic FM website, posted on March 16: "You can't quarantine music... Italy plays and sings from balconies in



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▲ One of the most powerful antidotes to stress and fear in which we can all engage is listening to our favorite music, or if we are a musician or vocalist, making it ourselves.

locked-down cities. Since the country was completely quarantined following the coronavirus outbreak... musicians, singers, and music lovers share beautiful performances from their balconies."

Our favorite music has the ability to lift our spirits and can even evoke a happy memory of a time, place, or event in our lives that can instantly transform our mood, calm us, and move our mind (and therefore our body) into a sense of joy.

In that joyful state, our brain and enteric nervous system (sometimes called "the second brain") produces dopamine, which boosts our immune system. At the same time, our favorite music can naturally cause a reduction in cortisol levels. Joy also triggers the pituitary gland in the brain to release endorphins into our bloodstream, hormones that provide a sense of euphoria while suppressing pain.

Listening to our favorite music throughout the day, even while engaging in mundane activities such as cleaning house, is one of the best ways to reduce our stress levels and give our immune system a boost.

This simple formula summarizes the music medicine effect:

Music + Joy = Immune System Boost

Stated simply, viruses and other pathogens can be more efficiently eradicated from our body when we move out of fear and into joy.

But there is more good news because the recent research project in which I collaborated with professor Sungchul Ji of Rutgers University, along with GreenMedInfo.com and the RoadMusic company, showed that red blood cells that are beginning to lose outer membrane integrity due to their age receive a lifespan extension when they are immersed in music for at least 20 minutes.

Interestingly, we found that the best results were obtained not with classical music, as we had imagined, but with popular music that contained a prominent bass beat. While more research is needed to identify the biological mechanism that underpins this effect, our preliminary hypothesis is that the rich low frequencies in music, whether popular or classical, produce pressure pulses that increase the oxygen available to hemoglobin molecules in red blood cells, effectively mimicking the pressure pulses of heartbeats.

This mechanical pressure, whether created by a heartbeat or by externally generated pressure pulses from music, causes the hemoglobin molecules to uptake the

oxygen dissolved in our blood. Drumming music, too, produced excellent results, presumably for the same reason, helping to increase blood oxygen. When more oxygen is available to "old" red blood cells, the mechanism may involve regeneration of the proteins in their outer membranes, giving them a new lease of life.

Red blood cells carry oxygen to all systems of the body and are essential to the immune system, so this important connection between music and blood health could prove to be an effective "medicine" of the future.

Another important connection between music and the immune system was reported in a 2019 study by Augusta University. Researchers found that when mice were subjected to low-frequency sound vibrations, macrophages in their bloodstream proliferated significantly.

Macrophages are the largest type of T-cell that engulf viruses and other types of pathogen. Although this effect hasn't yet been proven advantageous for humans, it seems likely that our blood will respond in a similar way, particularly since our blood experiments demonstrated the positive effect of low frequencies on red blood cells in human blood.

In summary, there are many ways to calm our nerves and become joyful, but perhaps none carry the universal appeal of listening to music.

Our favorite music has the almost magical ability to calm frazzled nerves, transport us in our imagination to special places and times, and banish the blues, while boosting our immune system, helping to vanquish viruses and other pathogens. In the words of Plato, "Music gives a soul to the universe, wings to the mind, flight to the imagination, and life to everything."

To learn more about the potential therapeutic benefits that come from listening to your favorite music, visit the GreenMed-Info database on the subject.

John Stuart Reid is an English acoustic-physics researcher and inventor of the *Cy-maScope*, an instrument that makes sound visible. He has studied the world of sound for over 40 years and is one of only two men to conduct an acoustics study of the Great Pyramid. He lectures at conferences in Europe and the USA. This article was first published on GreenMedInfo. Sign up for their newsletter at www.GreenMedInfo.health



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How Herbs Treat Lyme Disease

Research reveals how herbal treatments can succeed where antibiotics fail

CONAN MILNER

Every few years, a new disease grabs all the headlines. Meanwhile, millions suffer from a potentially deadly and disabling infection that receives little attention.

As many as 400,000 new cases of Lyme disease occur in the United States each year, according to 2018 statistics from the U.S. Centers for Disease Control and Prevention (CDC)—more than 10 times the number of annual diagnoses of HIV/AIDS.

Lyme disease can invade a person's organs (including the heart and brain) and damage the immune system, leaving the body vulnerable to a host of many common health problems that can affect every system in the body. In fact, Lyme can manifest differently in different people, and it can sometimes take many years and visits to several different doctors before patients realize what is at the root of their health problems.

Lyme is typically transmitted through a tick bite, but other insects may also carry the disease (it can even be transmitted sexually.) However, the actual cause of a Lyme infection is a bacteria called *Borrelia burgdorferi*. Under the microscope, this organism looks like a wiggling corkscrew—a bacterial shape known to microbiologists as a spirochete. Conventional treatment is antibiotics, but *Borrelia* can be very difficult bacteria to kill.

Evidence suggests that herbs may offer treatment advantages that antibiotics don't.

A new study published in the peer-review journal *Frontiers in Medicine* found that seven herbal medicines are capable of killing *Borrelia* in test tubes, and one of these plants caused complete eradication—a result that regularly prescribed antibiotics such as doxycycline and cefuroxime couldn't deliver.

This high performing plant is the West African shrub, *Cryptolepis sanguinolenta* (also known as nibima, Ghanaian quinine, or yellow-dye root). *Cryptolepis* is an herb best known in traditional Ghanaian medicine for treatment of malaria. Japanese knotweed (*Polygonum cuspidatum*) was also found to be highly effective. The five other herbs shown to kill *Borrelia* include black walnut (*Juglans nigra*), sweet wormwood (*Artemisia annua*), cat's claw (*Uncaria tomentosa*), rock rose (*Cistus incanus*), and Chinese skullcap (*Scutellaria baicalensis*).

The lab work was done at Johns Hopkins Bloomberg School of Public Health and funded primarily by the Bay Area Lyme Foundation—a nonprofit whose mission is to make Lyme a disease that is “easy to diagnose, and simple to cure.” It may sound simple, but this mission is an ambitious one.

The foundation's founders started the organization because of several challenges that weigh on Lyme diagnosis and treatment.

Testing

Conventional tests used to identify the disease are often unreliable. And even after several courses of antibiotics, the symptoms, and the bacteria that causes them, may still persist. Some experts estimate that at least 2 million Americans may be suffering from debilitating long-term complications because of Lyme disease.

But health officials don't typically discuss or acknowledge these complications.

A recent report from the CDC states that “Lyme disease can be treated successfully with a few weeks of antibiotics.” Doctors and patients, however, often confront a different reality. Because of the treatment challenges of Lyme, many patients now turn to herbal remedies as a way to fill the void left by often unsuccessful and inherently depleting antibiotic regimens. One of these doctors is Sunjya K. Schweig, a contributing author on the herb study, and scientific advisory board member at the Bay Area Lyme Foundation.

Schweig says his study tested 14 different herbs or natural remedies that many doctors already use in clinical practice for treating Lyme. Although seven of these remedies didn't demonstrate an ability to kill *Borrelia* in test tubes, Schweig explains that they may still have benefits in practice.

The Epoch Times talked to Schweig about his study, and the role herbs can play in Lyme treatment.

EPOCH TIMES: What makes Lyme disease so difficult to treat?

DR. SUNJYA K. SCHWEIG: Lyme disease is a very complex condition. We know with research that has come out of Johns Hopkins through Dr. John Aucott's lab with the SLICE study, 15 to 25 percent of those people who get an acute case of Lyme disease, even with adequate treatment, go on to have persistent symptoms.

There is a debate in the medical field as to what is happening there. Is it an inflammatory or autoimmune activation? This is what



Because of the treatment challenges of Lyme, many patients now turn to herbal remedies as a way to fill the void left by often unsuccessful and inherently depleting antibiotic regimens.

the CDC would have us believe. Or, in fact, is it a bacteria, which has a persistent phenotype stage that doesn't get killed by that first round of antibiotics? We believe strongly that there is a likelihood that the bacteria can go into a persistent phase and can evade antibiotic treatment on the short term course of an acute case. We've seen that in the research across many different animal models, including most recently at Dr. Monica Embers' lab at Tulane University, which has a research macaque monkey model. They've shown residual *Borrelia* organisms even with a duration of antibiotic treatment for up to four months.

Developing scientific evidence is showing that this bacteria is capable of hiding out in body tissues where the immune system can't find it. In addition, these areas frequently have poor blood supply, which makes it so the antibiotics can't really get to them either.

There are doctors who treat based on the patient's clinical response and use antibiotics or herbal treatments for a much longer term, and follow the patient's symptoms and recovery.

Unlike bacteria like strep, which is rapidly dividing and usually effectively treated with antibiotics, *Borrelia* is more persistent, like a TB or leprosy type of bug. There are many examples in the medical literature and in treatment protocols for having much longer duration treatment in these types of cases, frequently using multiple medications in combination.

Of course, antibiotics are not without their risks. Today we have increased appreci-

ation for the benefits and importance of the microbiota, and we don't want to disrupt this if we can avoid it. I think that's where herbal medicines have a really interesting role to play.

Furthermore, there is also a lot of drug discovery work that's been done looking for other treatments. For example, a medicine called Disulfiram, which is marketed for alcohol abuse, has been found to have some activity against *Borrelia* as well.

EPOCH TIMES: Does your study indicate that *Cryptolepis* is the best herb to treat Lyme disease?

DR. SCHWEIG: The *Cryptolepis* finding was a very exciting development. It has been shown in the research literature to be active against other bacteria, and it is. It's commonly used in Africa for malaria. It's also commonly used in the Lyme disease community for treating one of the co-infections called Babesia, which is a different bacteria/parasite that can also be passed through tick bites.

The finding we showed with *Cryptolepis* against *Borrelia* was a new contribution to the field, so we were really excited about that. It was one of the most active herbs in the study, and the only one in this study that showed the ability to eradicate the stationary phase of the bacteria and to prevent regrowth of the bacteria.

But it is important to remember that this is a test tube study, where we put in the different control solutions of the herbs, and then counted how many of the *Borrelia* are left over.

It's really important to me to make this differentiation, because I really respect these plants. There's a lot of things that happen in the body with an herb's activity which may or may not be related to its ability to kill the *Borrelia*. A lot of herbs work with immune modulation, or anti-inflammatory, or anti-cytokine pathways, just to name a few.

Some of the plants might not do a great job killing *Borrelia* in the test tube, but could still be a very good herb for treating Lyme. These herbal medicines may be able to work through pathways that only manifest within the living organism, and that's not going to happen in a test tube separate from the immune system function.

EPOCH TIMES: What are some features herbs have that antibiotics don't?

DR. SCHWEIG: This is why I love plants. Antibiotics have a single mechanism of action. They're very focused and very targeted. Plants on the other hand can have hundreds of different active compounds that have a variety of different activities. Some might be antimicrobial and kill bugs. Some might be anti-inflammatory and modulate cytokines. Some might be immune modulating, or even immune boosting.

Herbal medicines really work in synergy

in the body. When you combine herbs, you can create further synergies where you can leverage the additive effects. So that complexity and layering, where you have many active components, has a lot of wonderful effects. What we see frequently is that the disease has less resistance to the herbs because of how complex and nuanced their mechanisms of action are, and how many different pathways that they're hitting. As opposed to the antibiotics, where it can frequently be easier to develop resistance.

In fact, many doctors will use multiple antibiotics together and even do rotation protocols for increased efficacy, given the complex nature of the pathogens and the multiple bugs that can be present. And I have seen that help some patients. But antibiotic resistance is a huge problem in our world. We're running out of antibiotics to use and the development of new ones is slow.

I think if we can find solutions in plant-based medicines that can be a really critical avenue for helping a lot of patients.

EPOCH TIMES: We're often led to believe that the cures of the future will come from drug companies, not from nature. Why do you think herbs don't get more respect in modern medicine?

DR. SCHWEIG: There have been many very successful pharmaceuticals that come from a plant source. But I think medicine has taken a turn where it has become much more laboratory-based, where they're synthesizing these compounds on mass, then testing them and seeing what activities they have. The problem is that this process of drug development and discovery is extraordinarily expensive, and it can take decades. So they really need to have blockbuster drugs to make money.

And they certainly do make a lot of money. They can patent those medicines, and keep those patents for a good amount of time and really generate huge revenues.

But on the plant side, unless you come up with something completely novel, it's hard to patent that and protect it. Research on herbs happens more in the academic setting, in the lay public, and in the clinics. But it's not a big business. There's not a lot of money to be made. It doesn't have the profit motive.

One problem with Lyme disease research in general is that there hasn't been adequate funding coming from the government. It hasn't really been recognized as that significant of a problem as we know it is. Fortunately, this is starting to shift. We're starting to see more research dollars coming in, and more recognition, especially in the U.S. government. But up until now, it's really just been private organizations, like the Bay Area Lyme Foundation, who have really driven the agenda. They have raised almost \$30 million dollars for Lyme disease research. They are the No. 1 funder of Lyme disease research in the world. They work to stay clear of the debate in the medical field.

The idea is to move past the controversy, let the science speak for itself over time, [and] keep publishing studies and eventually affect change on the academic and governmental levels, so that we can get more funding to help deal with this incredibly complex and devastating epidemic that we're seeing.



Lyme disease can manifest differently in different people and take years and visits to several different doctors before being diagnosed.

“This is why I love plants. Antibiotics have a single mechanism of action. They're very focused and very targeted. Plants on the other hand can have hundreds of different active compounds that have a variety of different activities.”

Sunjya K. Schweig, scientific advisory board member, Bay Area Lyme Foundation

TRADITIONAL CHINESE MEDICINE

Immunity in the Time of COVID-19

Recharge the protective shield known as your immune system with rest, relaxation, and food

Taking action, however small, can give you a sense of control in a situation that feels very out of control.

LYNN JAFFEE

This COVID-19 pandemic is uncharted territory. We have no idea where it's going and when it might end. It can make you feel scared and rock your life physically, emotionally, and financially. Many people feel helpless in the wake of this virus that's moving through our country with alarming speed. Taking action, however small, can give you a sense of control in a situation that feels very out of control.

First, you can limit your exposure to other people and the outside world by staying home and keeping your distance when you leave your house for groceries or a blast of fresh air. Second, you can take some steps to boost your immunity. While the COVID-19 virus, affects people of all ages and health statuses differently, the statistics are telling us that those people with underlying health conditions and older adults are at a greater risk for developing severe symptoms, hospital-

ization, and death. Translation: Weakened immunity is a factor in negative outcomes.

While having a healthy immune system may not determine whether or not you get the coronavirus, it may play a role in how sick you become if you should get it. For a little insight on understanding how best to bolster your immunity, we can look to the fundamental teachings of Chinese medicine. While this may seem ironic, as China is ground zero for this pandemic, its traditional medicine has a rich and nuanced history of treating febrile diseases (those that involve a fever).

In Chinese medicine, immune function is viewed as something akin to a protective bubble that wards off potentially harmful pathogens that come from the outside environment (viruses, bacteria, pollen, etc.) and make you sick. This protective bubble is called Wei Qi, and when it's strong, it keeps you healthy by fighting off illness. Unfortunately, when your

Wei Qi is weak, lots of nasty bugs can get through your bubble, causing colds, flu, and other illnesses.

During this coronavirus pandemic, is there a way to strengthen your immunity? The answer is yes. Because immune function is considered to be a kind of Qi, or energy, having strong energy in general is protective. Or to put it another way, if you become depleted or run down, the energy that goes into protecting you is also depleted. Knowing this, there are some things that you can do to safeguard your immunity.

Get enough rest. This translates into getting enough sleep and not becoming run down. Your body heals and rejuvenates itself while you're asleep. If the quality of your sleep is compromised, your immunity suffers.

Take care of your lungs. Wait... what? In Chinese medicine, your lungs are closely



Exercise can help you get the deep breathing necessary to maintain healthy lungs.



Go outside and destress, but maintain social distancing where necessary.



Eat lots of vitamin-packed colorful fruits and vegetables but avoid sugary treats.



Getting enough rest ensures your body can rejuvenate itself and maintain immunity.

related to your immune system, because with every breath, they come into contact with the outside world. This means that your lungs are exposed first and tasked with neutralizing harmful pathogens. Considered your most external organ, your lungs are the protector of the outside of your body; that protective bubble called Wei Qi.

Think about it; the first organ that's affected by the COVID-19 virus? Your lungs. Having healthy lungs, then, is a way to boost your immunity. Deep relaxed breathing; exercise; avoiding breathing really cold air; and during this current pandemic, wearing a face mask are all ways to keep your lungs as healthy as possible.

Eat good food. Your energy is built on the food and nutrients that you consume. The ideal is to get lots of colorful fruits and vegetables (which are packed with vitamins), whole grains, and small amounts of protein every day. Avoid lots of sugary foods that can promote inflammation, and very fatty or rich foods that can bog down your digestion. And stay away from packaged or processed foods, which are usually nutritional wastelands.

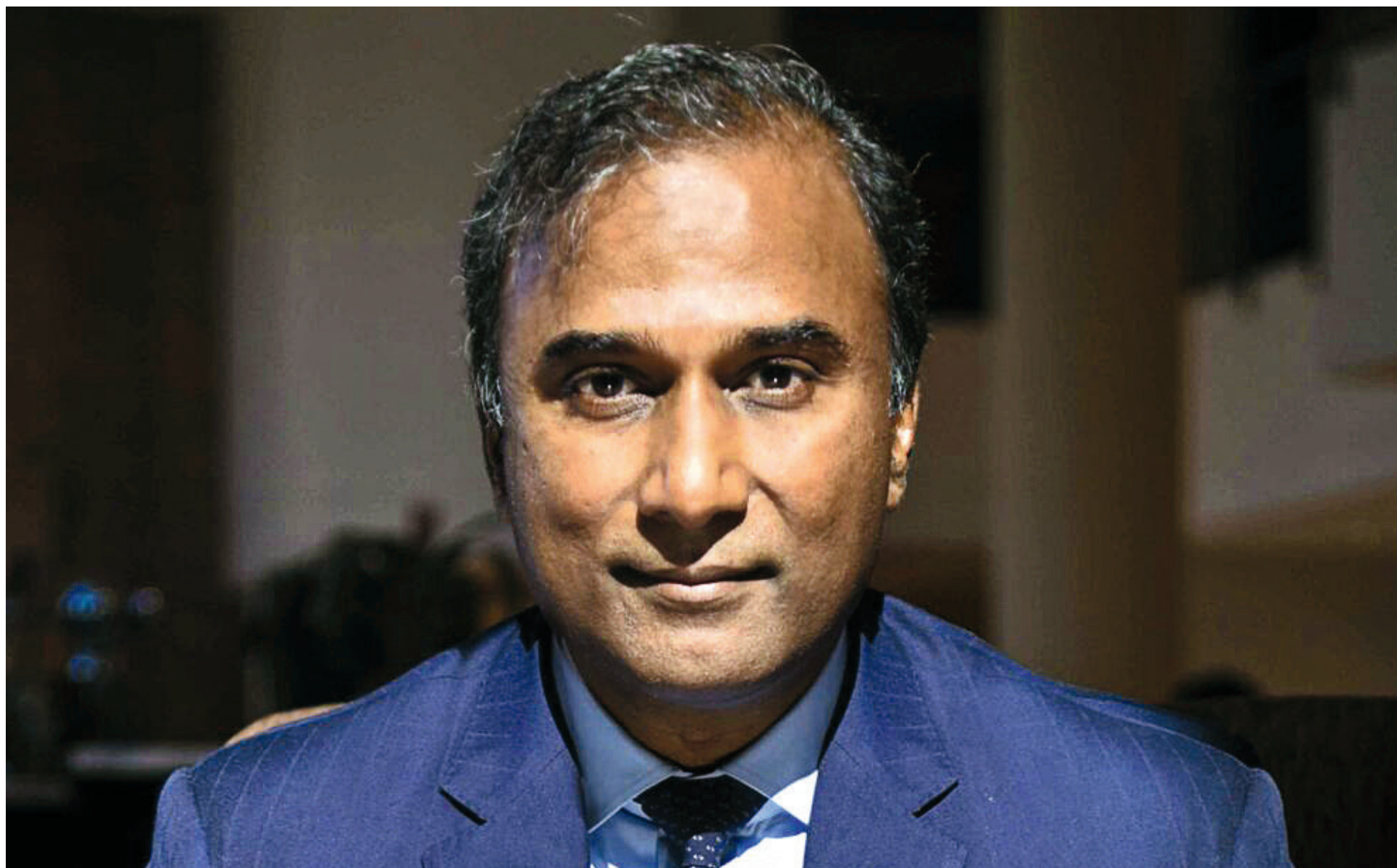
Tamp down your stress. I know, easier said than done while you're worrying about this virus, your loved ones, and the financial fallout. However, stress—especially long-term unrelieved stress—also has a negative impact on many of your

body's systems, including immunity. During the fight-or-flight response associated with stressful situations, your body turns down the volume on the systems you don't need in the moment to deal with the stress. Immunity gets put on the back burner until your stress dies down. Unfortunately for many of us, stress is a regular part of our lives, so immunity is sidelined indefinitely. Dealing with your stress by altering long-term stressful situations or slowing down will ultimately help strengthen your immunity.

Go outdoors. Even better, take a walk in the woods or a park, if possible. A number of research studies have found

that walking in a wooded setting can decrease stress, lower your cortisol (a stress hormone), decrease your blood pressure, and actually boost your immunity. The bottom line is that during this time of the COVID-19 virus when you feel like you have no control, there are a couple of things you can do. This includes staying away from others to decrease your risk of transmission, and taking really good care of yourself as a way to boost your immune system.

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



Dr. Shiva Ayyadurai.

Critical Insights from Indian Medicine

Dr. Shiva explains how systems engineering and Indian medicine should inform health care

MICHAEL WING

Nobody was going to call him new age weirdo for traveling to India to study traditional medicine. Not after having earned four degrees at MIT, and developing the first version email as we know it today. His name? Dr. Shiva Ayyadurai, an Indian-American scientist and entrepreneur. He's originally from Mumbai, and he now lives in Massachusetts. Among his degrees are a master's degree in mechanical engineering, and a doctorate in biological engineering. Dr. Shiva's fascination with Indian medicine began when he was a boy watching his grandmother, a village guru, heal people. Much later, he applied his engineering background to gain insight into that system of medicine and came away with an epiphany: the ancients were looking at the body as a system, the same way a modern-day systems engineer would.

This approach is much more rational than our modern allopathic approach that deals with the body and illness in isolated parts.

The body doesn't work in components. If you change one thing, it will change something else. And whatever is changed goes on to affect other things. It is an integrated system.

"The eastern systems of medicine were ... actually an engineering systems way to look at the body. So, this was a profoundly different way of looking at the body."

Dr. Shiva realized the ancients—often dismissed as backward by a medical establishment dominated by drugs and surgeries—understood this essential reality.

He decided to take his scientific background and examine India's two main systems of medicine—Siddha and Ayurveda—from a systems engineering viewpoint. What followed were some engaging insights.

A Journey From West to East

Dr. Shiva realized that modern Western medicine is a far cry from what it ought to be when viewed from a systems approach. "It fundamentally comes out of wartime medicine," Dr. Shiva told The Epoch Times in an interview. Western medicine is essentially for "putting a sol-

dier back on the field."

"Now, I'm not saying it's bad. Let's say, you happen to get into some horrible accident, if you happen to get into some crisis situation," he continued. "But is that how we should be running our lives day to day? I don't think so."

Dr. Shiva's observation falls in line with a common concern about allopathic medicine: it is great for acute scenarios where someone faces imminent death, but inadequate for the lifestyle-based diseases that plague our age.

Dr. Shiva said some of his peers found it strange that he wanted to go to India instead of working for a big pharmaceutical company but with a Fulbright scholarship in hand, he let his heart guide his actions.

A 'Different Language' for Looking at the Body

Dr. Shiva started analyzing Indian medicine through the lens of systems engineering. Systems engineering deals with complex systems over their lifecycle and uses systems thinking to design synergy into components so they can perform a task collectively and adjust to changes in the environment or input. Systems engineering lets the autopilot of a plane adjust to windspeed or direction, and lets your home thermostat activate your air conditioner or furnace.

In short, it is an approach to building things that more closely mimics the way living systems function.

The goal, as in the body's own complex system, is to maintain stability or homeostasis (equilibrium).

Indian medicine was, in effect, a system for balancing the body to achieve health, Dr. Shiva discovered.

He found parallels between how the two

systems things, including three key ideas found in both systems engineering and Indian medicine.

In general systems theory, they refer to transport, conversion, storage.

"Transport, conversion, and storage match one-to-one with 'vata,' 'pitta' and 'kapha,'" said Dr. Shiva.

Vata, pitta, and kapha are collectively known as the doshas. They are energetic forces of nature that combine in different ratios in each person and affect one's nature or character.

Vata is the transport force, characterized by the mobile nature of wind energy.

Pitta is the conversion force, embodied by the transformational nature of fire energy.

And Kapha is the storage force and captures the binding nature of water energy.

Indian medicine says the doshas bring about three different body-type constitutions, or tridosha. Each person has a different body type based on the balance on doshas.

"And based on that categorization, that defined you," Dr. Shiva said. "And once you were defined, they also figured out how your body was disturbed, in a disturbed, imbalanced state ... And the goal was to bring your disturbed state back to you."

These ideas reflect a developing trend in modern medical care as well—that medicine should be tailored to the unique characteristics of the individual. This is sometimes known as personalized medicine.

For example, headaches can be caused by dehydration, a lack of magnesium, stress, and other factors. Western medicine normally dictates we treat the headache directly, while functional medicine, Chinese medicine, and Indian medicine

Western medicine is essentially for 'putting a soldier back on the field.'

“It’s going back to you, having a relationship with your body, with your practitioner, and figuring out what’s right for you.”

Dr. Shiva Ayyadurai, Indian-American scientist and entrepreneur



The ancients were looking at the body as a system, the same way a modern-day systems engineer would.

have a prerequisite—understand the unique patient.

Other major terms in Indian medicine also found similar parallels in system engineering, found Dr. Shiva, like the system's input and output, karma and karma-phal, respectively. These all fit perfectly as a biological system's approach to healing.

There are complimentary differences between Indian and western medicine.

Whereas modern Western medicine deals well with late-stage or critical illness and can put a soldier back on the battlefield, Indian medicine deals with disease at earlier stages.

In the two branches of Indian medicine, Siddha and Ayurveda, there are six different phases. "The idea was, if you caught it in the early stage, prevention, you could solve it," Dr. Shiva says.

"Western system of medicine typically catches it in the fifth and sixth stage," he added, "when it's erupted to something that's in a crisis stage ... then you're going in fighting something—chemotherapy, surgery interventions—that's what we do in wartime medicine."

Bridging the Gap Between East and West

After returning to the United States, Dr. Shiva began lecturing on traditional Indian medicine from a systems perspective. He discovered that many in his profession were interested in what he had to say.

Dr. Shiva has tapped into a growing movement of medical doctors in the West who have come to the realization that the mainstream practice of medicine has major gaps and sometimes dangerous flaws. These include an absence of nutrition training and an increasingly robotic approach to treatments.

“It’s not supposed to be this complicated. The medical establishment wants to make it complicated. They want to do big medicine, they want to do big pharma, they want to do big vaccines.”

Dr. Shiva Ayyadurai, Indian-American scientist and entrepreneur

"They can recognize that it was really big pharma medicine or big hospital medicine: find this [symptom], bring the person to hospital; find this [symptom], give them this drug," he said.

"So there's a growing movement of MDs who realize that they got screwed, and they're actually looking for knowledge. Some of them are going into integrative medicine. Some of them are starting to use vitamins."

In the years that followed, Dr. Shiva advocated a systems approach that integrates both traditional Eastern and modern Western medicine:

He developed software called CytoSolve to mathematically model diseases on the computer to identify how combinations of foods, supplements, herbs, and compounds work, without the need for animal testing.

He also created an online school called Systems Health that certifies instructors in systems health education, and an online tool, Your Body Your System, to help people understand their body as a system.

One of the goals of these efforts is to bridge the gap between East and West by providing a common, scientific language and understanding that allows modern doctors to apply ancient wisdom.

His approach also decentralizes the practice of medicine, making it "bottoms-up" from patient instead of "top-down," from big pharma.

"It's not supposed to be this complicated," he said. "The medical establishment wants to make it complicated. They want to do big medicine, they want to do big pharma, they want to do big vaccines."

Dr. Shiva wants to see that paradigm lose its dominance.

"It's really going back to the village healer, right? It's going back to you, having a relationship with your body, with your practitioner, and figuring out what's right for you."

Despite his litany of achievements, Dr. Shiva has never forgotten the source of his inspiration: his grandmother.

"I saw her empirically heal people. So that led to my journey to want to be like her, want to understand how she could heal people," he said.



Seniors' lives are being upended as continuing care retirement communities take aggressive steps to protect residents from COVID-19.

Care Facilities Shut Out Threat but Seniors Feel Shut In

Continuing care communities struggle to balance safety against a need for connection

JUDITH GRAHAM

With tight restrictions in place at their continuing care retirement community, Tom and Janice Showler are getting on each other's nerves.

Most days, Tom, 76, likes to drive out of their community—Asbury Springhill in Erie, Pennsylvania—to the store to pick up a few items.

"If you follow the right protocols, the likelihood is quite low that we would come down with coronavirus," Tom said. "If I didn't go out at all, I'd feel like the walls were closing in on me."

Janice, 72, doesn't think that's a good idea. She has rheumatoid arthritis, an autoimmune condition that raises her risk of becoming seriously ill from the virus. Her father died of pneumonia, and "what terrifies me more than anything is not being able to breathe," she said.

With her fear and Tom's need for independence, "it's become a bit of a power struggle," Janice admitted.

Across the country, seniors' lives are being upended as continuing care retirement communities take aggressive steps to protect residents from COVID-19, the illness caused by the novel coronavirus.

These communities offer a spectrum of services, including independent living, assisted living, and nursing home care. They serve older adults with disparate needs, from the very healthy to the very ill.

Since mid-March, aided by guidance from the Centers for Disease Control and Prevention, many places have instituted strict policies. Most often, group activities are being canceled. Nonessential visitors aren't allowed. Dining rooms have closed, and meals are being delivered to people in their rooms. Staffers are screened (this includes a temperature check) when they enter and exit campuses.

And leaving campus is strongly discouraged.

Minimizing the risk of contagion and ensuring the safety of residents is a top priority, said Henry Moehring, senior vice president of Asbury Communities, which operates eight of these communities in Maryland, Pennsylvania, and Tennessee, including the center where the Showlers live.

Across the nation, there are about 1,900 such communities. Yet there's no national data about the number of residents or staff members who've become infected with the coronavirus or died.

Nor is there reliable information about the extent to which testing for the virus is available in these communities. Anecdotal evidence suggests it is hard to get, as is personal protective equipment for staff.

This month, the CDC published the first study of COVID-19 in a Seattle community that combines independent and assisted living. One key finding: Three residents who tested positive for COVID-19 did not have symptoms. This

calls into question the common practice of focusing on people with symptoms while trying to prevent the virus's spread.

Another finding: The community's early measures to contain COVID-19 appear to have succeeded. This may be because residents were able to practice social distancing and had relatively little contact with health care providers, researchers suggest.

Janet Schroeder, 86, lives at Three Crowns Park in Evanston, Illinois, an independent living and assisted living community where three residents were found to have COVID-19. Two have died. So far, state and local health officials have declined to test other residents. They say testing isn't recommended for people who are asymptomatic.

Three Crowns has closed its garage, so residents can't take their cars out. People are being asked to stay in their rooms. If they leave campus, they will be "asked not to return for the foreseeable future," according to materials from Three Crowns cited in a local news report. The facility's executive director did not respond to several requests for comment.

"Absolutely, I'm beginning to feel cooped up. Sometimes, I get very tired of my apartment. I want to get out and go someplace," Schroeder said. "I miss seeing people."

Initially, she said, she was "shocked and scared" to learn that COVID-19 was in the community, but now "I feel very confident that people here are taking good care of it and taking good care of us. As long as they hold the line and we all do what we're supposed to do, I think it's going to be OK."

At Asbury Methodist Village in Gaithersburg, Maryland, which has about 1,400 residents, Mary Ellen Bliss, 78, has been helping to form "clusters" of residents who regularly check in with each other and "provide backup for anyone who has a problem." She lives in an independent living section of the community called "the village," where people have small houses.

Over the past several weeks, Bliss has noticed a marked change in attitude among friends and neighbors: "Even a week ago, some people were pretty indignant at the restrictions being put into place. They felt they were cautious and the rules shouldn't apply to them: They should be allowed to come and go as they wished."

But as reports of COVID-19 patients flooding hospitals and dying in nursing homes have multiplied, "pretty much everyone is all on board and what sounded excessive a few weeks ago now seems quite reasonable," Bliss said.

As of last week, Asbury had reported two COVID-19 cases at its Gaithersburg campus: a resident, who was self-quarantining and asymptomatic, and a staff member who hadn't worked on the campus since mid-March. None of its other communities were known to be affected.

Of course, some residents just won't listen and insist on venturing out to stores or to see family. This has been an issue at Five Star Premier Residences of Yonkers in New York, where three residents tested positive for the coronavirus at the end of

March.

"We are working to keep everyone safe inside the building. Residents heading outside our gated community at this point [are] asking for trouble. YOU must help me here as some of our residents do not realize how serious this is," wrote John Hunt, executive director, in a March 29 advisory to residents.

A corporate official at Five Star Senior Living declined to comment.

"Every community will find there are certain people who have difficulty complying with requests," said Kristin Hambleton, vice president of marketing for Presbyterian Senior Living, which operates 12 continuing care retirement communities in Pennsylvania, Delaware, Maryland, and Ohio.

"We are addressing each of those people on an individual basis and discussing with them how their choices can impact the people they live with and the staff that works here."

At the start of April, two staff members at Presbyterian Senior Living tested positive for COVID-19. "No residents were exposed while they were exhibiting symptoms," Hambleton said.

Within the communities, threats other than COVID-19 abound. Without regular contact with other people, older adults can become

lonely or depressed. A change in someone's health status that might have been noticed if they didn't show up for dinner can now go unobserved. Without stimulation, motivation and cognition can decline.

Communities have responded by having staff

check in regularly with vulnerable residents, offering to arrange video visits with family members, organizing Zoom interest groups for residents and creating programming, such as exercise sessions, broadcast over closed-circuit, in-house television stations.

Sustaining residents' and staffers' spirits over the difficult weeks ahead is a priority for Stephen Colwell, executive director at NewBridge on the Charles in Dedham, Massachusetts, which has 256 independent living apartments, 51 assisted living apartments, a 40-apartment memory care unit and a 220-bed nursing home on a 162-acre campus.

"We've made so many changes so quickly, we've treated this like a sprint," he said. "But the fact is, this is going to be a marathon for all of us."

"Their efforts really help to smooth out what is an incredibly difficult time here," said Benita Ross, 71, who lives in a two-bedroom cottage on the campus. Every day, though, she worries about her three sons, who are physicians, and friends in their 80s and 90s whose health is fragile.

"There's intense anxiety that your family or friends may get sick and die," she said. "It's terrifying, and there's not a damn thing you can do about it."

Judith Graham is a contributing columnist for Kaiser Health News, which originally published this article. KHN's coverage of these topics is supported by The John A. Hartford Foundation, Gordon and Betty Moore Foundation, and The SCAN Foundation.

The Upside to Lockdown

Being forced to pause our hectic lives has brought us a chance to reconnect and re-evaluate

ERIC FETHKE

It's eerily quiet on a Sunday in New York. Pandemics have that effect, I'm learning. We're in the midst of the most disruptive infectious pandemic in generations. Many of us are facing unspeakable loss and pain.

I am a cardiologist with 25 years of experience. I would be lying if I said I wasn't worried. My patients are immunocompromised. They are the survivors of heart surgery, the ones living with myocarditis, battling heart failure. The people I treat are most vulnerable to dying from COVID-19.

There is evidence all around us of a silver lining to this global threat to human health.

So you may be surprised when I tell you that I remain optimistic. There is evidence all around us of a silver lining to this global threat to human health.

In the face of death, our priorities shift. We choose not to let petty nonsense, unnecessary conflicts, and hatred interfere with our precious time together. As only essential workers leave their homes to work, we now have the legitimate excuse to get off the fast train of commuting, meetings, gym workouts, chauffeuring kids, and getting up at dawn to do it all over again.

Instead, we are reconnecting with loved ones: at the dinner table, via video chats, on walks (staying six feet apart). We're

reminded why we love them. We appreciate what we share in common. We're talking more than tweeting. Hugging our pets. Checking in on neighbors.

On a hike the other day, I noticed families pointing out the wonders of the nearby forests: the oak trees, the daffodils, and star-shaped glories-of-the-snow. I saw still-spotted fawns and swarms of tadpoles in the mountain streams. Children were tuned into the waterfalls and winter-worn trails, experiencing real life, not virtual, eyes wide with wonder.

Many of my patients are infants. Their mothers are terrified. Is it safe to nurse? Is it OK to cuddle? What if they get sick? I explain breastfeeding is beneficial to the immune system. Their milk provides important immune factors including disease-fighting antibodies to defend against respiratory and intestinal viruses. La Leche League and the World Health Organization encourage all mothers to breastfeed. When we return to nature, we are again amazed by what it has to offer.

"Is it worth it?" Neighbors, colleagues, and patients want to know. They're overwhelmed by social distancing, isolation, and helplessness. They feel the immensity of the situation, disheartened by the idea that they have no real control over the sociopolitical aspects of their lives.

I tell them not to panic, to stay the course, to breathe. Even if we fail to flatten the curve successfully, it is the very essence of trying that actually matters. We are giving testimony that our social contract with each other still has value to us. This reaffirmation is priceless.

My oldest friend is a nurse administrator for elder-care facilities. He had to notify families that, to prevent the unintentional



As risk looms, priorities shift and we realize what is essential and what brings us true joy.

spread of the coronavirus to the nursing homes, they could no longer visit the elders.

Not wanting to be isolated, many residents went home to their families. Anecdotal evidence suggests the elderly living amongst their loved ones have been faring better than those who have remained in nursing homes. They have more mobility and better appetites. They're taking fewer antidepressants, requiring fewer doctor visits.

He foresees significant restructuring of older adults' living arrangements, an architectural transformation modeled after countries in Asia. Another silver lining of lockdown: Older adults experience a higher quality of life when we share the same household with extended family.

There are more upsides: As we undergo this forced natural experiment, our air, water, and land are clearing up. Decreased human activity is resulting in less human-generated pollutant levels. With clearer skies, our breathing problems improve and we understand the power we have as a collective. Instead of returning to smog and pollution, we can make changes to keep the environment clean and healthy.

International collaboration has become necessary. To fight this common enemy,

we are sharing medical and public health data between Asia, Europe, and the United States. Together we are more empowered than in isolation. Scientists from diverse countries are combining their brainpower to find a cure and develop a safe and effective vaccine. Once they have done so, together we will apply these discoveries responsibly and appropriately to quell the current pandemic and diminish the future potency of the virus.

Best of all, we are all becoming humbler. Our humility is our strength. With pride gone, we can be open to powerful and creative solutions to the health and socioeconomic problems we all share right now.

The importance of community, family, and the natural world. If we learn these lessons together, we will promote not just prosperity for some, but survival for all.

Dr. Eric Fethke is a pediatric cardiologist, author, and legal advisor who has been practicing in New York for 22 years. He received his BA from Princeton University and his MD from Columbia University. He has taught medical students and residents at Columbia, Albert Einstein, and now Touro universities.

In the face of death, our priorities shift.



Consuming healthy mood-boosting foods can deliver important brain nutrients while improving your well-being.

FOOD AS MEDICINE

Foods to Boost Your Mood

Now That You Really Need It

Certain foods have a significant impact on your biochemistry, affecting your mood in the process

It's all too easy to reach for comfort foods when feeling stressed or anxious.

Consuming that extra scoop of ice cream or another handful of chips or cookies, however, can cause feelings of guilt—and even more stress—along with fatigue and irritability from sugar highs and lows.

Fortunately, the opposite is also true: Consuming healthy mood-boosting foods can deliver important brain nutrients while improving your well-being.

Below are some nutritious and delicious foods that can improve

your frame of mind while helping you avoid adding the #quarantine15 pounds to your waistline and other related health issues.

Healthy, Mood-Boosting Comfort Foods

We know that omega-3 fatty acids found in fish—particularly docosahexaenoic acid (DHA)—play an important role in brain development. But these fats may also play a role in our mental health, too. In one meta-analysis involving 26 studies and more than 150,000 participants, researchers concluded that consuming high amounts of

fatty fish was associated with a significant reduction in rates of depression.

A 2014 study out of Italy examining the mechanisms by which omega-3s work concluded that while many factors may contribute to a rise in depression, "dietary recommendations suggesting proper intake of omega-3 polyunsaturated fatty acids... can result in substantial benefits for the general population."

"Those who consume ample amounts of the omega-3 fat DHA are less prone to depression, aggressiveness and hostility," according to registered dietitian Elizabeth Somer, author of "Food and Mood" and medical advisory board member for Persona Nutrition.

The healthy fat "helps form healthy membranes that easily transport nutrients into brain cells, lowers inflammation and raises serotonin levels," Somer added. Serotonin, sometimes known as the happy chemical, is one of the key neurotransmitters influencing our mood, so incorporating plenty of DHA in your diet can help you maintain a balanced outlook.

Continued on Page 11



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Keep Health Care Routines and Don't Ignore a Medical Emergency

Even during the pandemic you need to take care of chronic conditions and deal with major medical problems promptly

SERRA IVYNIAN, CALEB FERGUSON & MICHELLE DIGIACOMO

As we continue to navigate the coronavirus pandemic, many hospitals and health services are actually less busy than usual.

Fewer patients are presenting to emergency departments and primary care services around the world.

They might be choosing to stay away from fear of catching coronavirus, or because they don't want to put pressure on the health system at this time, or both.

But particularly if you're someone with a chronic health condition, it's essential you continue to seek medical care routinely, and especially in an emergency. Delaying or avoiding necessary medical care could lead to preventable deaths.

Anxiety and Fear

Delaying or avoiding medical care despite health problems is not a new concept. People often downplay the severity of their symptoms, believe they will resolve on their own, or perceive they can manage themselves at home.

This reasoning is now compounded by fear of becoming infected with COVID-19 as well as overburdening the health care system.

Some people living with chronic conditions such as heart failure, or lung or kidney disease may be more concerned about contracting COVID-19. This is justified. People with chronic conditions tend to get sicker than the overall population if they catch coronavirus, and are more likely to die.

Concerns about overburdening the health care system, which people already perceive to be stretched, has been a common reason for delayed care-seeking, even before the current pandemic.

But constant reports of overflowing hospitals and scarce resources during the coronavirus crisis may serve to validate this concern for people who are considering whether to seek medical care.

While it's too early to have definitive statistics, U.S. estimates suggest attendance at hospitals and general practices could be down by as much as 50 percent.

Why It's Important to Continue to Seek Care

People with chronic health conditions may need to seek medical care for a range of reasons. This could be routine care for a chronic disease such as chronic obstructive pulmonary disease (COPD), asthma, diabetes, cancer, or bowel or heart disease.

They may need to seek unscheduled care if their condition flares up. For example, for a person with chronic heart failure, it would be important for them to seek timely health care if they were experiencing symptoms such as breathlessness, fatigue, or peripheral edema (the accumulation of fluid causing swelling, usually in the lower limbs).

Importantly, if people delay seeking care for chronic illnesses, we may see an increase in preventable deaths. For example, for people with heart

disease, untreated symptoms could lead to long-term heart damage, need for intensive care, and death.

It's also possible if a large number of people avoid seeking treatment now, hospitals will find themselves overwhelmed when the pandemic is over.

You Can Go Out for Medical Care

While the global public health messaging urges people to stay home to save lives, it's important to understand one of the key exemptions is medical treatment. And this doesn't apply only to people with COVID-19 symptoms.

Regular GP or Specialist Appointments

People with chronic conditions may already be receiving advice from their health professionals about how regular appointments will be conducted.

To minimize risks to staff and patients, many health services are offering tele-health appointments (via phone or video conference). It's best to contact your GP or specialist by phone prior to your appointment to see whether this service is available and appropriate.

There will be times when a telephone or video-conference is not suitable, such as when your doctor needs to perform a physical examination, administer therapies including medications, or you need tests such as blood tests or X-rays. If you do need to attend a clinic or hospital in person, you should be assured they're taking additional precautions to prevent the spread of infection during this time.

If Symptoms Flare or in an Emergency

If your symptoms get worse, you should still contact your GP or specialist if this is your normal course. This is important even if you don't think your symptoms are urgent.

And it remains critical that in life-threatening circumstances—like if you believe you're having a heart attack or stroke—you seek medical attention immediately by calling 911.

These are medical emergencies and hospitals are well-equipped to respond, even during COVID-19.

Some Practical Tips

The Heart Foundation offers the following advice for people living with chronic conditions during COVID-19:

- Keep looking after your health and stay connected with your doctor
- Practice physical distancing and good hand hygiene
- Stay active and eat a healthy diet

And most importantly: Don't ignore a medical emergency.

Serra Iyynian is a research fellow in the faculty of health at the University of Technology Sydney. Caleb Ferguson is a senior research fellow at Western Sydney Nursing & Midwifery Research Centre, Western Sydney Local Health District and, Western Sydney University. Michelle DiGiacomo is an associate professor at the University of Technology Sydney. This article was first published on *The Conversation*.

AFRICA STUDIO/SHUTTERSTOCK



Don't hesitate to seek medical care if you experience a medical emergency or require routine medical care for a chronic health condition.

FOOD AS MEDICINE

Foods to Boost Your Mood

Now That You Really Need It

Continued from Page 9

Somer recommends aiming for at least two servings of fatty fish per week, such as salmon, herring, mackerel, or sardines, or looking for foods fortified with the omega-3 DHA. For a tasty way to enjoy omega-3 fats, check out my simple salmon recipe below.

Green Veggies: Spinach, Broccoli, Brussels Sprouts

These green veggies are a source of folate, a B vitamin that researchers have come to believe is important for the body's production of serotonin.

In one meta-analysis, researchers found that individuals with depression consume less folate and have lower blood levels of the vitamin compared to those without depression.

In addition to increasing the risk of depression, poor intake of folate is also linked to fatigue and poor memory.

Somer recommends consuming at least 400 micrograms of folate per day, an amount found in 1 1/2 cups of sautéed spinach. Beans, peas, lentils, avocado, and strawberries are other good sources of folate.

Probiotics: Yogurt, Kefir, Sauerkraut, Kimchi
You may have heard a lot about probiotics and their role in keeping our digestive tract healthy, but recent research suggests that probiotics may also play a role in keeping up our spirits. One study found that probiotics may help reduce negative thoughts associated with sad moods, and it suggested that probiotics supplementation warrants further research as a potential preventive strategy for depression. Probiotics can help alleviate depressive symptoms, according to another recent review involving 10 studies. There is a need, however, for more research to determine the ideal duration of treatment, dosage, and strain of probiotics to achieve better mental health. One of the easiest ways to enjoy a daily dose of probiotics is to consume a cup of low-fat yogurt with fresh fruit or a smoothie with yogurt as a snack.

Whole Grains: Oats, Brown Rice, Whole Wheat Bread
Whole grains are rich in B vitamins that are important for energy and optimal brain health. Thanks to their fiber content, whole grains also help to keep blood sugar from spiking and crashing, which can help you avoid mood swings. "If you're eating bread, reach for the whole wheat over the white, since it also stabilizes blood sugar levels," Somer said. "Refined grains found in white bread can send you on a blood sugar roller coaster, leaving you jittery, grumpy and hungry." Carbohydrates, including whole grains, combined with protein, can boost levels of serotonin. Protein, like chicken, legumes, fish, or nut butter with whole grains, also triggers the release of norepinephrine, a brain chemical that provides



The biochemical impacts of food can shape our mood.

an energy and mood lift.

A whole-grain bagel with peanut butter, for example, can make for a nutritious mini-meal. Somer also likes whole-grain crackers or breadsticks with low-fat cheese.

Serotonin, sometimes known as the happy chemical, is one of the key neurotransmitters influencing our mood, so incorporating plenty of DHA in your diet can help you maintain a balanced outlook.

Vitamin D: Egg Yolks, Fatty Fish; Fortified Milk

We've talked about vitamin D and its relation to bone health and immunity, but research has also revealed a connection between vitamin D and mental health. In one recent meta-analysis involving more than 30,000 people, those with low vitamin D levels were more likely to be depressed.

Vitamin D deficiency has also been associated with low moods and poor cognitive performance in older adults.

Our bodies synthesize vitamin D from the sun's ultraviolet light, so most of us can meet at least some of our D needs during sunnier months. Certain factors including darker skin and air pollution, however, can reduce the ability of the sun to produce vitamin D in human skin, according to Dr. Michael Holick, an expert on vitamin D research from Boston University.

So in the wintertime, it's especially important to seek out vitamin D-rich foods,

like fatty fish, eggs, and fortified foods and beverages, or vitamin D supplements.

Yes, Dark Chocolate (in moderation)

This sweet treat can definitely give us a mood boost. Chocolate contains caffeine and theobromine, a compound that may boost mood in moderation but could have less helpful effects on mood in higher amounts, researchers found in a 2013 study. The popular indulgence may also boost serotonin levels.

What's more, dark chocolate also contains healthful flavanols that have been shown to help lower blood pressure and cholesterol, and improve cognition.

To keep weight in check, limit portions to 1 ounce of dark chocolate daily, or about 150 calories.

Coffee and Tea

Coffee and tea are sources of caffeine, which can give us a lift.

"When we consume caffeine, it has positive effects on mood and alertness, and people like these beneficial effects," said Mary M. Sweeney, an instructor who researches caffeine's effects on individuals in the department of psychiatry and behavioral sciences at the Johns Hopkins University School of Medicine.

One meta-analysis revealed that consuming coffee (and tea) may help protect against depression.

Just keep in mind that people vary in their tolerance to caffeine. "Many people consume caffeine without negative consequences, but for some individuals, either regularly consuming too much caffeine or consuming too much at once can cause distress," Sweeney said.

Green tea has less caffeine than coffee, is a rich source of the antioxidant epigallocatechin gallate, or EGCG, and also contains the amino acid theanine, which may help reduce stress and promote calm feelings.

For a healthy boost, check out my matcha (green tea) latte recipe.

Lisa Drayer is a nutritionist, an author, and a CNN health and nutrition contributor. *The-CNN-Wire* and copyright 2020 Cable News Network, Inc., a WarnerMedia Company. All rights reserved.

Mood-Boosting Recipes

MUSTARD-CRUSTED SALMON WITH ROASTED GREEN BEANS AND SHALLOTS

from my book, "The Beauty Diet"

TOTAL TIME: 45 MINUTES

Nonstick cooking spray

1 pound green beans, trimmed

2 shallots, sliced

2 teaspoons extra virgin olive oil

1/2 teaspoon kosher salt

1/2 teaspoon freshly ground black pepper

4 6-ounce wild salmon fillets

2 tablespoons Dijon mustard

2 teaspoons honey

Preheat the oven to 425 degrees F. Line a baking sheet with foil and spray with nonstick cooking spray; set aside. Bring a large pot of water to a boil, add the green beans, and boil for 3–5 minutes or until bright green and slightly tender. Drain and run under cold water until cool.

Drain well; toss with the shallots, oil, salt, and 1/4 teaspoon of the pepper; and place on one half of the baking sheet. Place the salmon fillets, skin side down, on the other half of the baking sheet. In a small bowl, mix the mustard and honey and spread evenly on the salmon fillets.

Season with the remaining 1/4 teaspoon pepper and roast in the oven until the salmon is just cooked through and the beans are lightly browned, 12–14 minutes.

YIELD: 4 SERVINGS (6 OUNCES SALMON AND 4 OUNCES GREEN BEANS EACH)

IMMUNITY-BOOSTING MATCHA LATTE

from Lisa Drayer.com

TOTAL TIME: 10 MINUTES

2 cups 1 percent milk fat vitamin D-fortified milk

1 1/2 teaspoons matcha powder

1 tablespoon hot water (boiling is ideal)

1 1/2 tablespoons maple syrup

In a blender, blend milk for about 30 seconds, until frothy. In a small bowl, dissolve matcha powder in hot water. Add milk, dissolved matcha, and maple syrup to a small pot and heat over medium heat for about 5 minutes, until hot but NOT boiling. The mixture should be very frothy but if it reaches boiling, the froth will start to disappear. Serve warm.

YIELDS: 2 SERVINGS

How COVID-19 Highlights the Importance of Overall Health

DEVON ANDRE

While there is evidence that young people can get COVID-19, the numbers suggest the most vulnerable among us have the highest risk.

There is research to suggest that health conditions like heart problems and diabetes can make COVID-19 much more dangerous.

One study out of China, for example, found that nearly 73 percent of those killed by the virus averaged at about 66 years of age and had an existing noncommunicable chronic disease. Some associated conditions were high blood pressure, coronary heart disease, and diabetes. [Editors note: *The Epoch*

Times has received information and documents revealing the Chinese regime has manipulated its infection statistics, but this profile of those most vulnerable to COVID-19 is comparable to reporting from reliable sources.]

While there is no surefire way to prevent infection or limit its effect, these numbers suggest that a person's existing health condition plays a major role in the severity of the virus.

This highlights the importance of practicing a preventative lifestyle. We never know when a pandemic can hit, and being as healthy as possible when it does may be a matter of life and death, regardless of age. Every year, tens of thousands

Sometimes it's hard to recognize how the daily decisions we make throughout life make a real difference.

of people die from the flu, and outside of young children, it is the same cohort that is taking the biggest hit from COVID-19.

So, what can you do? COVID-19 can serve as motivation to take more care. Practicing a healthy lifestyle that promotes lower blood pressure, reductions in cholesterol, and improved heart health is a place to start.

Working to manage blood sugar and potentially reverse diabetes, or prevent it, is another area of focus.

Losing weight to take the stress off of your body can also help to optimize your immune system and promote anti-aging and longevity.

Sometimes it's hard to recognize how the daily deci-

sions we make throughout life make a real difference. But the current pandemic is, in a way, showing that they can.

Although there is no guarantee that lifestyle can protect you from infection, it can lower your risk and put your body in a better place to handle what the world throws at it. After all, a healthy lifestyle is associated with a reduced risk of a number of chronic conditions.

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FOOD AS MEDICINE

Noni Juice

Lowers Cholesterol Among Smokers

Blood-vessel damage from smoking is linked to higher risk of heart disease and stroke

Cigarette smoking is known to lead to many different kinds of cardiovascular diseases. What can be done to prevent this? Quitting smoking is best, but a study shows that drinking noni juice may reduce the risk of this top killer among smokers.

Cigarette smoking is one of the leading causes of death in the U.S. People who smoke cigarettes may die from complications in their respiratory and cardiovascular systems. Smokers may also develop lung cancer or tuberculosis.

In the U.S., government data show that cigarette smoking causes around one in every five deaths each year, resulting in more than 480,000 deaths annually including those from secondhand smoke.

While the dangers of cigarette smoking cannot be entirely alleviated, let's look back at a 2012 study on how drinking noni juice may be helpful in reducing the risk factors for cardiovascular disease among smokers.

Noni Juice Reduces Cholesterol

Cigarette smoke can significantly increase the total cholesterol and triglyceride levels of smokers, causing systemic inflammation and dyslipidemia, which reflects an abnormal amount of cholesterol and triglycerides in the body.

To find out whether this risk can be reduced, researchers from the University of Illinois at Chicago College of Medicine investigated the effects of fruit antioxidants such as noni juice (*Morinda citrifolia*) on

smokers. For the study, 132 adult smokers were divided into three groups.

One group received 29.5 milliliters (mL) of noni juice all at once in the morning on an empty stomach. Participants in the other two groups drank 118 mL of noni juice daily—59 ml in the morning on an empty stomach and 59 ml before bedtime. This continued for 30 days.

The smoking habits of the participants did not change, as they continued to smoke the same way as before. Chemical analyses were made on the lipid profiles of the participants.

According to the study, "the blood lipid profiles of heavy smokers were improved after 4 weeks of noni juice ingestion, even when compared to a fruit juice placebo [...] The antioxidant activity of iridoids in noni and the lack of iridoids in the placebo suggest that they are responsible for at least some of the protective or adaptive effects of noni juice observed in this trial."

In the end, drinking noni juice significantly reduced the cholesterol levels of participants in the study. In both noni juice groups, reductions in mean cholesterol, triglyceride level, and high-sensitivity C-reactive protein (hs-CRP) levels were observed. After the trial, the test group had levels that were significantly lower than before the trial, and than the placebo group.

In the noni juice groups, average total cholesterol, triglycerides, and hs-CRP dropped by 20.3–25.6 percent, 29.4–41.2 percent, and 15.2 percent, respectively.

The Brutal Effects of Smoking

According to a report from Health Physics, cigarette smoking has led to "443,000 deaths and 5.1 million years of potential life lost among the U.S. population each year from 2000 through 2004," while the collective radiation dose

Some of the other benefits of drinking noni juice include lowering blood pressure, reducing risk of cancer, and having a protective effect against memory impairment.

from cigarette smoke is 36 times more toxic than that from nuclear power plants.

The U.S. Centers for Disease Control and Prevention explained that smoking damages a person's blood vessels by making them narrow and thick. This causes high blood pressure and can lead to a stroke.

According to a study, smoking only about one cigarette a day translates to a much higher risk of developing coronary heart disease and stroke than expected, around half that of individuals who smoke 20 per day. Essentially there is no safe level of smoking for cardiovascular disease.

If you decide to quit smoking, it is important to stay fit and well. Leading a healthy lifestyle will be a sound and necessary move during smoking cessation. One of the ways to stay healthy is to eat the types of food that are good for your heart and lungs, including noni juice.

Other types of antioxidant-rich foods can also be beneficial. For instance, a 2017 report published in *Oxidative Medicine and Cellular Longevity* found a link between pomegranate juice and a reduction in the incidence of lung cancer among animal subjects that were exposed to cigarette smoke.

Other Perks From Drinking Noni Juice

Noni juice comes from an evergreen tree that grows in tropical regions around the world. Researchers of the featured study explained that noni fruit has a significant use both as food and medicine among those in Southeast Asia and the Pacific Islands.

Some of the other benefits of drinking noni juice include lowering blood pressure, reducing risk of cancer, and having a protective effect against memory impairment.

For more information, review a 206-abstract database on smoking, or read collected noni juice research abstracts at GreenMedInfo.com.

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Noni juice was found to have unique properties that could reduce the damage that even just one cigarette a day can do to a person's blood vessels.



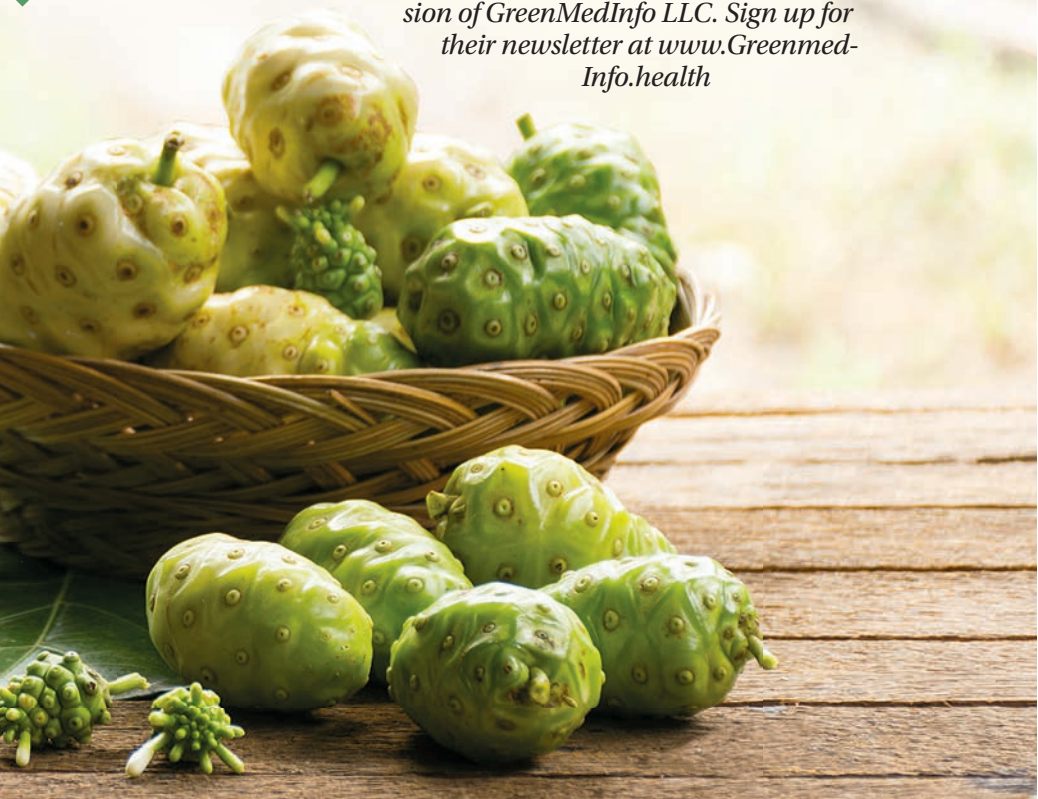
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TRADITIONAL CHINESE MEDICINE

Drug-Free Help for Chronic Pain

Before popping pills, try these gentle alternative treatments

LYNN JAFFEE

Let's face it: Being in chronic pain is awful. It creeps into every aspect of life. Your sleep may suffer, it's tough on loved ones, and you feel like there are so many things that you can't do. Over time, being in unrelenting pain is frustrating and wears you down.

Is there anything you can do to feel better without taking pain medications every day? The answer is "maybe." Here are a few things that might help decrease your pain, increase mobility, and bring you more peace of mind:

Use heat. Applying heat to where you hurt increases circulation in the area and loosens tight, cranky muscles. One caveat: If the area is red and swollen, ice may be a better bet.

Get a massage. Not only can

massage be incredibly relaxing, it also boosts circulation, loosens tight muscles, and helps increase your range of motion. Make sure you find a massage therapist who understands your condition and what you need in terms of pressure and style.

Biking is a great low-impact way to warm and loosen up your muscles and joints and get your heart rate up.

Go to physical therapy. If you've not already done so, get a few sessions with a physical therapist. They can assess your condition and give you stretching and

strengthening exercises specific to your needs. Not only will your physical therapist work with you in the clinic, but they will also give you some exercises to do at home.

Get on a bike—indoors or out. Most physical therapists have their patients warm up on a stationary bike for five or 10 minutes if they are able. Biking is a great low-impact way to warm and loosen up your muscles and joints and get your heart rate up.

Go for a walk. Sometimes walking feels like the last thing you want to do, but lacing up your shoes and taking a walk actually decreases stiffness and pain, especially if you're suffering from fibromyalgia or back pain. It's also good for your lungs and heart, increases the amount of oxygen circulating in your blood, and boosts your energy.

Stretch. Slow and gentle stretching loosens up tight muscles, and

just plain feels good.

Try yoga. Gentle yoga combines stretching and strengthening with breathing, through various postures and positions. It helps to loosen up muscles, decrease pain, and relax the mind.

Lift weights. If you are able, lifting weights can help by strengthening the muscles to increase support in the area affected by pain. This is especially true for pain in the neck, shoulders, back, and core. Work with a knowledgeable trainer, and don't overdo it, at least to start. You can always add more weight later.

Get in the water. Low-impact water exercises are a great way to loosen up your muscles and increase your range of motion. If you're really hurting, try watsu, a gentle, movement-based massage done in the pool. Whether you're doing water aerobics or

watsu, look for a facility that offers a warm therapy pool. Cold water might cause your already stiff and achy muscles to feel tighter.

Try an acupuncturist. Known for its ability to decrease pain, acupuncture works by altering the neurotransmitters in your central nervous system to turn down the pain "volume" and activate your body's built-in opioid system. Acupuncture also decreases stress, reduces inflammation, and supports healing. Your practitioner may also incorporate Chinese herbs, heat therapy, bodywork, or cupping into your treatment for the best results. Be sure to look for an acupuncturist who is familiar with your specific condition.

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



Grow a lush lawn without concern for what might be on it.

CLEAN LIVING

Get a Thicker, Weed-Free Lawn—Naturally

Skip the toxic herbicides and renew your lawn without worrying about chemicals

DEBORAH MITCHELL

For many people, a well-kept lawn is a source of great pride and satisfaction. However, maintaining a weed-free, lush lawn without the use of specific chemicals can also be a great deal of work unless you practice a few guidelines on a regular basis.

Even if the blades on your lawn are thin right now and weeds are crowding out the grass, with a little patience and dedication, you can revive your lawn naturally without the need for toxic herbicides and fertilizers.

How to Get Thicker Grass

If you follow these suggestions, you can expect to see a more lush lawn beginning in a few months, depending on which part of the year you begin and where you live.

Aerate in the Fall

Buy or borrow a hand-held core aerator. Before you set out on your mission, water your lawn thoroughly. Take the aerator and remove plugs from your lawn. This task increases the amount of oxygen as well as water and nutrients that reach the roots.

Killing unwanted weeds can be as simple as boiling water.

Apply Grass Seed

Purchase grass seed that is the same variety as the one already in your yard. If you are unsure, check with a lawn expert or your local agricultural cooperative. Apply the seed over your entire lawn and water thoroughly. If you are starting a lawn, be sure to choose a grass that is suitable for your climate that doesn't need a lot of water.

Remove Thatch Regularly

Accumulation of thatch (dead grass, stems, and roots) can choke out healthy grass. If you have a small lawn, a hand thatch rake can do the trick. Otherwise, there are power rakes available.

Water Properly

Water is a precious commodity, so be conservative. Monitor the amount of water you are applying to your lawn. Too little will result in dead grass and thinning areas, while too much is a killer as well. Water early in the morning and never during the heat of the day. A general recommendation is to feed your lawn at least 1–1.5 inches of water per week over the course of 2–3 waterings in the week. How do you know if you have watered enough? If you can't push a 6-inch screwdriver into your lawn, you need more water.

Mow Correctly

It's tempting to cut your grass really short so you won't have to mow it as often, but short grass blades are vulnerable to insects, the weather, and a lack of sufficient nutrients. A general rule is to never cut more than one-third the length of the grass blades. For example, if your lawnmower is set at two inches, mow your grass when it reaches three inches or less.

Also practice grasscycling, in which you scatter your grass clippings back on your lawn. This will promote a thicker lawn by helping keep the moisture in the soil.

Apply Lawn Fertilizer Regularly

Choose a fertilizer that is appropriate for the type of grass in your lawn. Generally it is best to fertilize more heavily in the spring and fall and less in the summer. You should fertilize the day after you have done a deep watering. Check with a lawn expert to determine the best fertilizer for your grass type and region. Some people use compost tea or homemade compost to feed their lawn.

How to Get a Weed-Free Lawn

Ridding your lawn of weeds doesn't have to involve toxic herbicides, fungicides, or pesticides. These can pollute soil, groundwater, plants, and anything that touches your lawn. Instead, try any of the suggestions below on how to get a weed-free lawn.

Even though these are natural methods, they may still have a negative impact on adjacent grass (except for the first suggestion), so be sure to focus your efforts on the weeds and avoid the grass as much as possible.

Pull 'Em

If the weed situation is not too overwhelming, a great way to eliminate the pests is to pull them out by the roots. Use a weed hand tool and, if possible, get the entire family involved in the project!

Add Boiling Water

Killing unwanted weeds can be as simple as boiling water. Apply the boiling water to the stems and leaves of the offensive plants. This approach is best for weeds that are growing through cracks in the sidewalk or driveway, or a large area that you plan to replant once you have eliminated the weeds. If you use boiling water in your garden, be very careful to avoid your flowers and produce.

Salt 'Em

A solution containing common table salt, when applied to the leaves of weeds, can be very effective. The recipe calls for 1 part salt to 3–8 parts water (depending on how strong you want to make it) plus a teaspoon or so of liquid dish soap. Use a spray bottle to apply the solution. The secret is to avoid getting the solution into the soil (or just a minimal amount). You can tie back plants that may be around the offensive weeds so you can focus the application process. You may need to reapply the salt mixture after several days or especially after it rains.

Mulch

A two-inch layer of mulch is a great way to keep away weeds in your garden (but obviously not a plan for your lawn). In fact, mulch will quickly kill your grass if you don't keep it contained.

Douse With Vinegar

You can use common 5-percent-acetic acid white vinegar, which should kill most weeds, or opt for the stronger

20-percent-acetic acid agricultural strength variety that can damage your skin and lungs. Wear gloves and avoid inhaling the fumes if you go for the 20 percent. You can apply either full strength directly on the leaves of weeds using a spray bottle. Avoid spraying on your grass or garden plants. You may improve the effectiveness of this method if you add a small amount of liquid dish detergent to the vinegar. Reapply the vinegar as needed, and especially after rain.

Ridding your lawn of weeds doesn't have to involve toxic herbicides, fungicides, or pesticides.

Use Combo Power

If one natural herbicide is good, why not two together? A mixture of 1 gallon of vinegar and 1 cup salt, with a little liquid dish soap if desired, can work wonders. Again, use a spray bottle and focus your spray.

Bring On the Borax

This basic cleaning product can help clean out weeds from your yard. Combine 2.5 gallons of water and 10 ounces of powdered borax in a large spray container. In addition to keeping overspray away from your other plants, avoid contact with your skin.

Eat 'Em

One man's weed is another man's dinner. Many weeds are edible, including dandelions, chicory, and dock, and some are also medicinal. You might contact your local agricultural cooperative and explore which weeds are safe to harvest and consume in your area. Once you pick them, you can enjoy them in salads, omelettes, stir fry, or perhaps even smoothies.

Deborah Mitchell is a freelance health writer who is passionate about animals and the environment. She has authored, co-authored, and written more than 50 books and thousands of articles on a wide range of topics. This article was originally published on NaturallySavvy.com



A two-inch layer of mulch is a great way to keep away weeds in your garden.

How to Keep Coronavirus Worries from Disrupting Your Sleep

A sleep expert weighs in on how to get a better night's rest during this time of heightened stress

JILL SUTTIE

Many people I know have been complaining lately about losing sleep. It's no surprise why. All of us are feeling increased stress and worry as our lives are turned upside down. COVID-19 can keep us up at night.

What can we do to protect our sleep? For answers, I turned to Shelby Harris, former director of the Behavioral Sleep Medicine Program at Montefiore Medical Center, an associate professor at the Albert Einstein College of Medicine, and author of the book "The Women's Guide to Overcoming Insomnia." We discussed what's driving sleep disruption, the place of news and social media in our lives, the best way to binge your favorite TV shows, and more.

JILL SUTTIE: Why do you think it's important to consider our sleep during a time like this, when so much else is going on?

SHELBY HARRIS: Sleep is important for so many things. It's important for mood regulation, emotion regulation, as well as the immune system. We need sleep to keep us as sane as we can be and also to keep ourselves healthy.

Also, it's important for our relationships. People who are sleep-deprived tend to be more irritable with their family and more irritable at work. We're already stressed to begin with, but without enough sleep, people will lash out a lot easier and a lot quicker at others around them. Our irritability goes from zero to 60 a lot faster when we are sleep-deprived.

MS. SUTTIE: People seem particularly anxious right now. Is this playing a role in sleep disruption? Are other things contributing?

MS. HARRIS: People are definitely worried right now. They're worried about their families, about money, about what's going on in the world. And even people who aren't typically anxious are now saying that their brains are so busy that they can't turn them off to go to sleep. Or they wake up two hours later and their brain is just right there thinking about news and about life, and they just can't quiet it down.

But there are also people who know that their families are fine, and while they're concerned about the world, they're not overly worried. What gets them off track with sleep is the lack of a schedule, the lack of routine in their lives. They're not in their same beds, or they're not going to sleep and waking up at the same time. Maybe they're watching the news and get-



LIGHTFIELD STUDIOS/SHUTTERSTOCK

ting bright-light exposure at night, or they're not exercising the same way they used to, or they're not socializing during the day. When their routine is taken away from them, that's when people get thrown off their sleep.

MS. SUTTIE: How does not socializing affect our sleep?

MS. HARRIS: When I think of socializing, I think it's like charging your battery. It's not about just talking to people over Zoom, but about people having a lunch date or working out with a partner and going out for a walk together. These are all ways to help bolster your mood by socializing, but they also mean you're getting light exposure, which charges your battery.

If we're not doing those things—if we're not connecting with people and we're not going out of the house—it's going to make it harder for us to sleep at night. Plus, if people feel more isolated, that can negatively impact their mood, too.

MS. SUTTIE: You mention watching the news as a problem, but we need to stay informed.

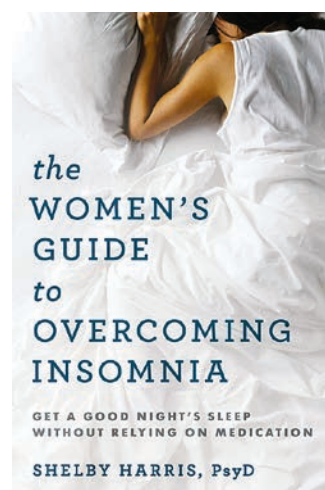
MS. HARRIS: I'm a huge fan of limiting your news intake, and I think everyone needs to stop checking the news at night, when nothing is changing. People should try to check news no more than once a day, if that. And people need to be very thoughtful about what they're checking and why they're checking it. Here in New York, I'm having people just watch Governor Cuomo's conference briefing every day, because it's really the least triggering source of news for people.

MS. SUTTIE: Do you think that positive or inspiring news could be useful now?

MS. HARRIS: It can be, but staying away from all news at night is a good idea. Not that you should live

▲ I'm encouraging people to use meditation a lot during the day, because that helps with all of these sleep issues.

People need to stay away from screens at least half hour to an hour before bedtime because that bright light really does delay sleep.



"The Women's Guide to Overcoming Insomnia" by Shelby Harris. Published by W. W. Norton & Company, 288 pages.

in avoidance—that's not good either. But, at night, you just need to find a way to wind down. Maybe you could add some positive news into your hour or half-hour of news during the day. But at nighttime, that's when you should practice gratitude, practice meditation, practice the stuff that's more personal to yourself.

MS. SUTTIE: I'm hearing people complain about three different sleep problems: not being able to fall asleep, waking up in the night feeling panicky, and waking up too early without a full night's sleep. Do you see those as separate problems requiring different interventions? Or are they all the same problem?

MS. HARRIS: I can't really say, because people's sleep problems are so varied. Sometimes depression can cause early-morning awakening, but so can anxiety. Then again, a busy brain can be the cause of us having trouble falling asleep. A lot of women who're going through perimenopause and hormonal issues can wake up in the middle of the night, or so can people with sleep apnea or diabetes. So, it's hard to make blanket statements—there are so many different factors that can cause these things.

Even so, I tend to treat them all very similarly. I try to have patients practice limiting time in bed if they're not sleeping. If you're not sleeping, you shouldn't be in bed. And you shouldn't try to force sleep—that's the worst thing you can do.

I'm encouraging people to use meditation a lot during the day, because that helps with all of these sleep issues—at the beginning of the night, the middle of the night, and the early-morning awakenings.

Also, some people may tell you that if you didn't sleep at night, you should take a nap during the day to compensate for the loss of sleep at night, or to sleep in late in the morning, or to go to bed earlier than usual. But that's all stuff that's actually going to make it worse. So, I recommend people keep a stricter sleep schedule when they're not sleeping well.

A lot of these recommendations help across the board, but what I might change is the timing of going to bed—for some people. I might have some people stay up later to push their wake time later; but that's very individual and varies based upon their sleep schedule and how severe the problem is. It depends if someone's waking up super early—like two in the morning every night.

MS. SUTTIE: A lot of my friends have

been sharing great TV shows and movies to stream or watch at the end of their workday. Is watching these a problem for sleep?

MS. HARRIS: It's fine and not fine. People will binge-watch in a good way—maybe to get out of their reality. But then they lose track of what time it is and before they know it, it's an hour or two or three later than when they should be going to bed. So, what I usually recommend people do is to watch one show and then turn off the auto function on Netflix (or whatever service it is) so that when the show ends, you make a mental note of looking at the time. If it's close to your bedtime, you turn off the show. People need to stay away from screens at least half-hour to an hour before bedtime because that bright light really does delay sleep.

MS. SUTTIE: What about the content of the show? Does that make any difference?

MS. HARRIS: Light actually has a bigger influence than content. That's why they make a huge deal in the sleep field about blue-light exposure before bed and during the night. But yeah, of course what you watch is going to make a difference, too.

That being said, I've worked with a lot of millennials over the years who were watching "The Office" and "Friends"—I don't know why those two shows, but they love those two shows—and they will not change to become a reader. So, what I have them do is use blue-light-blocking glasses that you can get online to watch TV. That's worked for them, because those shows are calming and funny and the glasses block most of the blue light.

I haven't seen content make a big difference. As long as it takes you out of stress, it's fine. But I am a big fan of just old-school methods for calming your mind before bed. Find a book, find a magazine or a puzzle if you can. Up until an hour before bed, you can watch all the TV you want. But, from a sleep preservation standpoint, you don't want blue light right before bed, because it reduces your natural melatonin. Melatonin is the hormone usually released in your brain when the sun goes down and makes you sleepy. Interfering with its release is a terrible idea.

MS. SUTTIE: Is there anything else that you think we need to know to sleep better?

MS. HARRIS: Some people need to stay away from social media as much as

Having a routine is key because if you don't have a routine during the day, you're not going to have any routine at night.

possible. I want people to connect, but some social media feeds tend to be triggering for people.

Having a routine is key because if you don't have a routine during the day, you're not going to have any routine at night. Too many people are working into the late-night hours because they can't keep ahead of everything. They need to try to set a cutoff time—a strict bedtime and wake time—and to really end their day so that they reduce white-light exposure at night.

Also, make sure when you're working during the day that you have

bright light. Open your shades, even if it's cloudy out—especially when you first wake up in the morning. Then, an hour or two before bed, start dimming the light, to say to your brain that it's bedtime now. You should get into a rhythm where it's light during the day and dark at night, to help set your nighttime circadian rhythm. That will help you sleep, too.

Jill Suttie, Psy.D., is Greater Good's book review editor and a frequent contributor to the magazine. This article was originally published by the Greater Good online magazine.

▲ If we're not connecting with people and we're not going out of the house—it's going to make it harder for us to sleep at night.

A 20-Minute Dose of Nature Could Cut Your Stress



KZENON/SHUTTERSTOCK

Be creative and find something that is emotionally or intellectually interesting to you.

Research into the effects of experiencing nature reveal its calming effects contribute to well-being

JIM ERICKSON

Spending just 20 minutes in nature can significantly lower stress hormone levels, researchers say.

The stress-reducing benefits of experiencing nature apply even if you're simply gardening, doing yardwork, or sitting quietly in the backyard.

The finding, which the researchers call a "nature pill," comes from a small study published in *Frontiers in Psychology* in 2019.

The research has special significance now when most United States residents are under stay-at-home orders and people are

bombarded with daily updates on the soaring number of COVID-19 cases and deaths.

Here, Mary Carol Hunter, an associate professor at the University of Michigan School for Environment and Sustainability, explains the research and how you can reduce your stress by getting up and getting outside:

QUESTION: How can contact with nature help people reduce stress?
MARY CAROL HUNTER: In this time of uncertainty, social isolation, and adjustment to a different lifestyle, spending time in nature—while maintaining proper social distancing, of course—is one antidote for our distress. Exposure to nature has many benefits, including better sleep, reduced inflammation, improved immune function, and, key among them, a better state of mental well-being, including stress reduction, the ability to stay focused, and the experience of awe.

There are physical benefits as well, including exposure to cleaner air and beneficial secondary plant compounds (phytoncides) and health-building microbes, and natural production of vita-

min D, an important component of a healthy immune system.

We know that the healing impact of a nature experience doesn't require a trip to the wilderness or complete immersion in nature. In fact, any place that helps you feel connected to nature will do. The sense of connection with nature can be passive or active. A passive experience is subconscious. It is one of soft fascination, the kind of thing that happens when the mind wanders and you notice the air on your skin, birds calling, and the shape of trees against the sky. An active experience is a conscious interface with some aspect of nature. For example, an "oh, wow" moment when looking at something beautiful, or becoming observant, engaged with the workings of nature—like the way buds open or pollinators interact with a flower.

Regardless of outdoor activity, de-stressing and other types of mental restoration happen more readily by gently turning the mind's focus away from itself.

Mary Carol Hunter, associate professor at the University of Michigan School for Environment and Sustainability

Regardless of outdoor activity, de-stressing and other types of mental restoration happen more readily by gently turning the mind's focus away from itself. Take a mindfulness approach

to noticing the sight, sound, or smell of nature. Use intentional focus on some aspect of nature—anything from the larger landscape to the workings of a tiny element. You could keep track of the change in interesting buds on trees or shrubs near your home, and make a photo set that unfolds the story as buds open. Be creative and find something that is emotionally or intellectually interesting to you—ants that are streaming out of cracks, or the order of flowers opening along a forsythia branch, or changes in the shape of clouds over time, or the early morning soundscape from your front porch.

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for cortisol, a stress hormone, and used to determine if stress levels had changed by the end of a given nature experience. We found that a nature experience produced a 21.3 percent per hour drop in cortisol levels, with the greatest efficiency (best outcome for time put in) from nature pills lasting 20 to 30 minutes. Thereafter, stress relief continues to build, but at a slower rate. The study provides the first estimates of how urban nature experiences impact stress levels in the context of everyday daily life.

QUESTION: Tell me about your 2019 study in *Frontiers of Psychology*. How was it done and what did it find?
MS. HUNTER: For an eight-week study period, 36 volunteers from the Ann Arbor area agreed to have a nature experience for at least 10 minutes, at least three times a week. People were free to choose the time of day, duration, and the place of their nature experience—defined as somewhere the participant felt a connection with nature. Once every two weeks, participants collected saliva samples before and after that day's nature pill.

Saliva samples were analyzed to noticing the sight, sound, or smell of nature. Use intentional focus on some aspect of nature—anything from the larger landscape to the workings of a tiny element. You could keep track of the change in interesting buds on trees or shrubs near your home, and make a photo set that unfolds the story as buds open. Be creative and find something that is emotionally or intellectually interesting to you—ants that are streaming out of cracks, or the order of flowers opening along a forsythia branch, or changes in the shape of clouds over time, or the early morning soundscape from your front porch.

emotional well-being in natural settings than the same activity done indoors. Mindfulness meditative practices produce greater restorative effects in settings that simulate natural settings compared to urban or indoor settings.

QUESTION: Is it necessary to exercise vigorously while you are outdoors in order to see these benefits?

MS. HUNTER: No. Under quarantine and as the weather warms, people are taking more indoor activities outside. The benefits of nature can arrive even if your focal activity is something different—exercise, meditation, grilling, and safe socializing. Beyond the physical benefits of exercise, being outside while exercising brings further benefit in terms of mood improvement, cognitive function, and other aspects of mental well-being. The power of being outdoors is central to the ParkRx and NatureRx programs, wherein doctors and health care practitioners across the country and internationally write a non-pharmacological prescription for a dose of nature that is appropriate for the person in their care.

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The Ring-Around-the-Rosies Phenomenon

Playful responses to deadly diseases aren't new, and a bit of black humor isn't unhealthy

HERESA RAMSAY

My older sister took great pleasure in telling a younger-me the dark history behind the nursery rhyme, "Ring-around-the-Rosies." She told me that the cheerful tune was written about the Black Death: The "pocket full of posies" refers to small bouquets of sweet-smelling herbs the healthy would carry close to their noses in order to protect themselves from foul-smelling and "contaminated" air; the "falling down" represents death, as is parodied by the accompanying action; and the "ashes" sung about are ashes of that sort.

Needless to say, this isn't a pleasant backstory (nor an accurate one). In high school, however, I witnessed something which made it incredibly believable. During a school camping trip, at the height of the Ebola crisis, I watched a group of grade-schoolers play a game of their own development: Ebola-tag. Much like a version of tag (given many different names, though I called it 'blob-tag'), any tagged child would "catch Ebola" and also be "it," linking arms with their infector.

The children playing didn't see anything wrong with their game. The parents watching didn't stop them. At a time when every news agency was sharing the most recent and concerning statistic, it was a small relief to see Ebola momentarily sanitized by children's laughter.

As the current COVID-19 pandemic became such, I wondered if my youngest brother would be playing similar games, even



Ring-around-the-Rosies, with its urban legend backstory, has been played by children for generations.

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as I prepared to return from college. He's empathetic and sweet—but also 10. When I got back, he wasn't conforming to the pattern; and so, I forgot my curiosity.

That curiosity was soon unexpectedly satisfied, however: I learned that a friend's siblings had begun playing their own coronavirus tag! The game revolved around the etymology of the virus, which was named for its spiky, crown-like protein protuberances, and their version of tag was one in which the person who was "it" wore a crown, which they would pass off to those they tagged.

Nor is this phenomenon, which I will simply term the "Ring-around-the-Rosies Phenomenon," unique to children.

Adults are engaging in it, too, albeit not necessarily in games or play-acting. Perhaps you've heard the viral remix of Cardi B's coronavirus rant. Or heard one of the specially compiled quarantine playlists. And it would take a Herculean effort to avoid the countless pandemic memes and jokes adults and young adults are making en masse.

Playful responses to this sort of tragedy, aren't new—there were jokes even in 1918 about the Spanish flu. This sort of black humor isn't unhealthy. Many Americans are panicking about the pandemic (as evidenced by empty toilet paper shelves across the nation) and

many, also, are ignoring it. The cultural saturation furthered by playful coronavirus references threatens the security of deniers, but may also comfort panickers.

In a study published in 2011, Stanford psychologists determined that black humor necessitates a change in perspective toward the negative reality presented. That is, in order for somebody to be able to really get a dark joke, one first must acknowledge the reality being referenced and then be able to look at that reality in a new or unusual manner. For this reason, allowing oneself to laugh at the pandemic is an acceptable response and, I think, healthy. By adopting a playful approach toward coronavirus, deniers are forced to face the reality of the crisis in an easy-to-swallow manner that may even slip past defenses, and worriers are given a means to regulate their anxiety toward the slew of concerns raised by COVID-19.

In many ways, the current pandemic is concerning and unprecedented—so let's approach the situation in the age-old, human way: by laughing. Preferably from inside our homes. Who knows, perhaps my future children will play "Protein-around-the-RNA" and not believe me when I tell them what the story is behind the line that "toilet paper has gone away."

Theresa Ramsay is a student at Wyoming Catholic College, but is currently at home in Austin, Texas, with her parents and six siblings. This article was first published on FEE.org



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