

WEEK 7, 2020

THE EPOCH TIMES

# MIND & BODY

Many doctors and consumer advocates fear that the tech industry, which lives by the mantra “fail fast and fix it later,” is putting patients at risk—and that regulators aren’t doing enough to keep consumers safe.

## A Reality Check on Artificial Intelligence Are Health Care Claims Overblown?

The FDA has eased market-entry requirements for some tech companies but that poses health risks for patients **2**

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Steps to a Stronger Immune System

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## THE ROOT CAUSE

# It's Official— Stress Ages Us

The impact of stress on the cells that color our hair reveals one way we age more quickly



## ARMEN NIKOGOSIAN

**S**tress has been blamed for causing gray hair for ages and researchers have now discovered the specifics of this relationship. The stress response activates the fight-or-flight response which can cause irreversible damage to pigment-producing stem cells in the hair follicles known as melanocytes.

The recent study, published in *Nature*, investigated the effects of stress on the melanocyte stem cells of the hair follicle of mice. Melanocyte stem cells produce the pigment cells responsible for coloring the hair, skin, iris and other regions of the body.

The research team needed to single out the precise mechanism that led to the loss of these melanocyte stem cells. That was tricky due to the broad nature of the stress response, which affects systems throughout the whole body. Stress affects immune function, cortisol secretion, and norepinephrine production. Norepinephrine (also known as noradrenaline) is used in the body and brain as a hormone and neurotransmitter. Norepinephrine's main job is to mobilize the brain and body for action.

After a process of elimination, the team focused their efforts on investigating the sympathetic nervous system, which generates the fight or flight response. The sympathetic nervous system is spread throughout the body with minuscule branches going to each hair follicle. When stressed,

these sympathetic branches will secrete norepinephrine, which is then absorbed by the melanocyte stem cells nearby. Norepinephrine can spur the overproduction of melanocyte stem cells. If the stress lasts more than a couple of days, this overproduction leaves the melanocyte stem cells permanently depleted and they subsequently die.

The death of these stem cells is a process of aging. You can think of aging as something which once made ongoing contributions to the body no longer functioning and the body deteriorating as a result.

While researchers began linking stress to gray hair decades ago, these new findings reveal the specific mechanism and deepen our understanding of how stress affects the body. What first seems like a frivolous study confirming something most of us already knew—that stress turns hair gray—turns out to be another valuable addition to our understanding of exactly why stress is bad for us.

It seems highly unlikely that only the melanocyte stem cells of the hair follicle are killed off in this stress response. What about the implications of induced states mimicking the stress response. For example, amphetamine usage or even chronic anxiety create something nearly identical to a stress response. The ravages of chronic amphetamine use and abuse can be clearly seen in the user—and the effects go far beyond premature graying. Does

The definition of aging is broad but the loss of regenerative ability is a core feature.

**The stress response activates the fight-or-flight response which can cause irreversible damage to pigment producing stem cells in the hair follicles known as melanocytes.**

norepinephrine cause these other aging effects as well?

What about the scores of other types of stem cells in our body regenerating cell lines that we don't wear on the top of our heads? We now have evidence that exposure to prolonged stress will permanently damage our regenerative abilities and stem cells are a primary driver for regeneration in our body. Loss of these cells directly impacts our regenerative ability. The definition of aging is broad but the loss of regenerative ability is a core feature. With the information presented here, I think we can now officially say: "Stress accelerates aging."

With this study, the groundwork has been laid for further consideration of how stress affects other tissues and organs in our bodies. This will hopefully pave the way for new studies investigating the effects on other stem cell lines as well as a better understanding of how to modify or even block the damaging effects of stress.

And what if there are ways to reverse this process?

In the world of naturopathy, relatively high doses of copper and manganese have been used to reverse some premature graying of the hair. Although I've never seen a complete reversal with this supplementation, I have seen hair darken again. Protection of the existing melanocyte stem cells seems like a probable mechanism but how do you get gray hair to turn dark again if the stem cell is dead? Could copper and manga-

nese have effects on reviving the dead melanocyte stem cells?

The sign of a good study is that it creates as many, if not more, questions than it answers. This study certainly fits that description.

In the meantime, the best control against excessive stress in your life is you. Your stress response is not caused by what happens in your life, but how you respond to it. Many adults have poor stress management skills. Stress management can be learned and special emphasis should be placed on teaching our children and grandchildren these skills. The trend of insulating our children from the stress and difficulty of life has created a generation of adults who have little to no resilience to stress. We teach children the importance of hygiene, exercise, good nutrition, avoidance of tobacco and alcohol, and loads of other habits and behaviors to optimize their health. Now it is time to put stress management on that list.

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## TRADITIONAL CHINESE MEDICINE

# Tips for Healthy Aging

Traditional advice for aging well finds a helpful echo in modern medicine

## LYNN JAFFEE

My neighbor Marie is hardly ever home. She's out during the day at one of her volunteering gigs or hanging out with a friend. Friday nights are date night, which usually involves dinner out with her boyfriend. Weekends are spent visiting with family, and during the summer, she spends time at the lake cabin. It's no wonder that I rarely see her—she's constantly on the go. The kicker is that Marie is 88 years old.

Marie is a role model for how I want to age. She's active, involved, and relatively healthy. It's a puzzle, however, why some people grow older with good health and energy, and others decline much sooner.

Certainly, genetics and lifestyle play a big role. That said, there are many exceptions—people living into their 80s, 90s, and even past 100, who have never dealt a poor genetic hand and have been paid much attention to living the clean life. So, what's the deal?

One explanation may involve the theory behind epigenetics, in which your genes are affected by external or environmental factors instead of DNA sequencing. This simply means that beyond your inherited genetic makeup, how you live also impacts genetic expression—how your genes communicate with your cells.

In Chinese medicine, your body constitution is shaped by something called essence. It determines your overall health, how you grow and mature, your fertility, and the aging process. You inherit that essence from your ancestors, which sets the stage for your physical makeup (much like genes). As you age, that original essence is slowly depleted and can never be replaced. When it's completely used up, you die.

However, there is a second kind of essence that can augment and conserve the original stuff. By living healthfully, eating well, and avoiding crazy extremes, you can protect your original essence so it does not decline as quickly.

This centuries-old theory from Chinese medicine sounds very much like the current, cutting-edge study of epigenetics. Beyond claiming to have known this first, Chinese medicine also offers up some ideas on how to protect yourself to age as long and healthfully as possible. This includes the following:

**Balance your rest and work cycles.** You need enough rest in the form of sleep to heal and rejuvenate your body. In addition, while a certain amount of work is important to keep your mind sharp, in Chinese medicine working excessively is considered to be a cause of illness.

**Move your body.** Movement in the form of exercise is the closest thing to the fountain of youth. Movement creates



the game. And you don't have to revamp your whole kitchen. Research has documented that even small, healthful dietary changes make a positive difference in your health.

**Mind over matter.** The Chinese have a saying that emotions are the cause of 1,000 diseases, and I have found this to be true in my acupuncture practice.

Stress, anxiety, worry, depression, and negativity impact your health, and not in a good way. Negative emotions impact your digestion, sleep, blood pressure, and hormonal makeup, for starters.

The impact of a poor emotional state is very real and far-reaching. Current research indicates that people with a negative outlook have a shortened expected lifespan. My prescription? A little gratitude every day.

Your genetic makeup is a bit like a hand you are dealt in a card game. You may get a good or not-so-good hand, but how you play the game is really what counts. Whether talking about epigenetics or how to preserve essence in Chinese medicine, lifestyle choices make a difference in how you age.

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Movement in the form of exercise is the closest thing to the fountain of youth.

## FOOD IS MEDICINE

# Prebiotics and Probiotics Can Help Your Kids De-stress and Excel

Nurturing the beneficial microbes that live inside our bodies can help us cope with the stresses of modern life

## JAYA JAYA MYRA

It's no surprise that kids are facing more stress than ever before. Global online learning platform Brainly did a national survey in December 2019 where they learned that 59 percent of students have constantly high-stress levels and 53 percent of

students reported needing better sleep. Not surprisingly, 53 percent of students also reported needing better time-management skills. What can be done about this, and how can we as parents (covertly, if necessary) lend a helping hand?

Surprisingly, it may be as simple as adding additional pre and probiotics to your kid's diet. Probiotics are the beneficial bacteria in the gut and on our skin that are well known for supporting proper digestion. It turns out that those friendly microbes we all carry with us, known as our microbiome, do much more than just help digest our food: they and their probiotic counterparts also play a significant role in improving mood, reducing stress levels, and helping us sleep.

Probiotics come in many forms, from supplements to kid-friendly fizzy drink shots, but you can get them easily from foods you're already eating, like yogurt, kefir, sauerkraut, tempeh, miso, and one of my favorites, kombucha, a type of fermented tea. Fermented foods, in general, contain active probiotics. Probiotics are the food those healthy bacteria feed on. Getting probiotics into your body is great, but feeding them and nurturing them is perhaps even more important. It's only a fairly recent discovery that fiber is one of the primary probiotic substances that your gut flora needs to thrive. Previously, doctors thought fiber was mainly for elimination, but now there are clear scientific connections to its role

as food for your microbiome. Not getting enough probiotic fiber can contribute to things like poor sleep, brain fog, stress and lethargy, none of which are helpful to students of any age.

Any food that contains ample fiber is a great probiotic nutrient, including bananas, avocado, leafy greens, oats, onion, garlic, and even apples. Apples are a wildcard because their seeds have been shown to also contain many probiotic strains. Eating apple seeds can be safe, contrary to popular belief regarding their cyanide content; as long as you don't chew dozens of apple seeds, you'll be fine. Swallowing them whole offers very little risk.

Recent statistics have shown that 95 percent of people don't get

enough fiber each day. So even if you're getting probiotics, if they don't have the food they need, they'll starve to death. Stress has also been shown to kill the gut microbiome, meaning that if you are dealing with lots of stress (like your kids do every day at school), regularly consuming both pre and probiotics can be important.

Making changes is not always easy, and few children will opt for a fiber supplement. So to help with that, here are some simple things you can do to get both the pre and probiotics you and your kids need to de-stress and get a better night's sleep.

**Breakfast:** Try swapping out cereal for oatmeal or steel-cut oats with banana. If you're more of a smoothie person, add some peanut butter, cultured yogurt, bananas, and fresh cacao. This will give you ample probiotics to start your day off strong (even without the yogurt if you're dairy-free, as I am).

**Lunch:** For younger kids, peanut butter with whole-grain bread is a great probiotic option, paired with cultured yogurt and granola to add in the probiotic content. If you're not a peanut butter fan, you can opt for a leafy green salad, fresh veggies, or

even a grain bowl with barley or brown rice. Don't forget to add an apple.

**Dinner:** You have many dinner choices that ensure your kids will enjoy the healthful upgrade. Try a bowl of miso soup for an appetizer. Add some fresh grains or fresh vegetables as a side dish, or even a noodle veggie stir fry. Even a home-made fruit salad (don't forget the cultured yogurt) will give you a pre and probiotic boost to help you get better sleep.

Don't take my word for any of this, try it for yourself and see how you

feel. Food, after all, is your best medicine and simple changes can lead to a mountain of positive difference, not just in your health, but in your mindset, motivation, and emotions. Happy eating!

*Jaya Jaya Myra is a wellness lifestyle expert and go-to media expert on mind-body wellness, stress management, mindfulness, food for mood, and natural, healthy living. She's a best-selling author, TEDx and motivational speaker, and creator of The WELL Method for purpose-filled healthy living. Visit [www.JayaJayaMyra.com](http://www.JayaJayaMyra.com)*





# Want to Stay Motivated to Accomplish Your Goals?

Mindset shifts can help you find a deeper connection to your goals so you stick with them

SACIA ASHE

In recent years there has been a surge against the tradition of setting New Year's resolutions, but could this simply be the result of the majority of the population not being able to uphold their self-commitments?

Setting New Year's resolutions isn't the only time you can set goals that reflect the person you want to become. However, one of the pitfalls that many face when choosing these goals is treating them as a way to show their lofty ambitions off to friends and family, rather than truly looking inward for goals that align with who they truly want to be. A trick to setting goals you will stick to is asking yourself why you are setting them.

**When you find honest motivation, you can set goals that will be easier to uphold.**

If you are setting the goal to lose 10 pounds for the third year in a row, why? Do you truly want to lose weight? If so, what will make this year different? How will you feel when you

achieve this goal? What will it change? Asking yourself these deeper questions can sometimes be difficult. You may find that a goal you've repeatedly set but never achieved is not serving you.

You may discover that you don't want to lose weight but you want to feel more confident in your body. You can then set a goal based on that stronger motivation. Maybe you could find new forms of exercise that make you feel powerful. Perhaps you could do a closet refresh and purchase clothes you feel more confident in. When you find honest motivation, you can set goals that will be easier to uphold.

After setting goals you can commit to, you need to create a game plan that will lay out the specific steps it will take to achieve your goal. As an example, perhaps you want to start a passion project. The first step would be to figure out what specific and measurable things you want to accomplish by the next year. Perhaps by 2021, you hope that you will be making an extra \$10,000 from your side hustle. Now, what steps do you have to do to achieve that? Break down these steps into small tasks that you can write into your weekly or daily to-do list.

Once you know the steps it will take to achieve your

goal, how do you maintain motivation to follow through? Since your goal is based on your intrinsic rather than external motivations, when you waver in your discipline take a step back and remember why you want to achieve your goal. Envision how you will feel when you accomplish it and embody that feeling. Imagine the impact it will have when you achieve your goal.

Each time you feel a pull away from your goal, ask yourself why. What are you afraid of? What is making you waver, and how can you fix the situation? To truly maintain motivation, you need to ask yourself the uncomfortable questions and push through the temporary hardship while resisting the temptations of immediately rewarding activities (like eating brownies). With these mindset shifts, you can join the four percent of people who keep their resolutions each year.

*Sacia Ashe is a dancer, health food lover, and blogger who has a passion for wellness and living a healthy lifestyle. Through sharing recipes, glimpses into her own life, and wellness tips and products, she strives to help others find a life that aligns with their values and health vision.*



Each time you feel a pull away from your goal, ask yourself why.

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When we are kind to others, it releases neurochemicals in our bodies that increase trust and give us a warm feeling.

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TRUTH and TRADITION

## A NEWSPAPER GEORGE WASHINGTON WOULD READ

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## How to Start a Kindness Revolution

A book explains how to boost kindness in the world, and why that would make life better for us all

JILL SUTTIE

Kindness. That's a word we don't hear a lot these days. Perhaps it seems antiquated in our competitive, social-media-infused, politically contentious culture—reserved for fools and chumps, not for those who want to get ahead.

But nothing could be further from the truth, according to Tara Cousineau, researcher, and author of the book "The Kindness Cure." In today's world, she argues, we need to cultivate kindness more than ever—not only for the sake of our society but for our own well-being.

Cousineau points out that we are wired for

kindness—that it's part of our biological heritage, designed to help us foster relationships, work together, and survive in groups. When we are kind to others, it releases neurochemicals in our bodies that increase trust and give us a warm feeling.

Research suggests that being kind toward others is associated with better and stronger mental and physical health, relationships, life satisfaction, communities, and even economies, writes Cousineau. Her book points to some of the research behind these claims, but it is mainly a how-to on starting a kindness revolution—and overcoming barriers to kindness.

Continued on Page 10

**We are wired for kindness—that it's part of our biological heritage, designed to help us foster relationships, work together, and survive in groups.**



# Why Losing Kobe Bryant Felt Like Losing a Relative or Friend

The power of the parasocial bond can make a one-way relationship feel more profound in the media age

EDWARD R. HIRT

**O**n the afternoon of Jan. 26, I was at the Indiana men's basketball game when a chorus of cellphones in the crowd pinged, alerting them to the news of Kobe Bryant's death. I was astonished at how quickly fans' attention switched from the game to utter shock and disbelief at the news of Bryant's passing.

Soon, it seemed like the entire nation was in mourning. Sure, we might expect the basketball world to grieve the passing of one of its all-time greats, but grief came from all corners. The Grammy Awards featured poignant tributes to Bryant. President Donald Trump and former President Barack Obama offered their condolences. People who had never met Bryant told reporters they felt like they had just lost a family member.

How can so many be so deeply affected by the death of someone they've never met? Why might some people see Kobe Bryant as a family member?

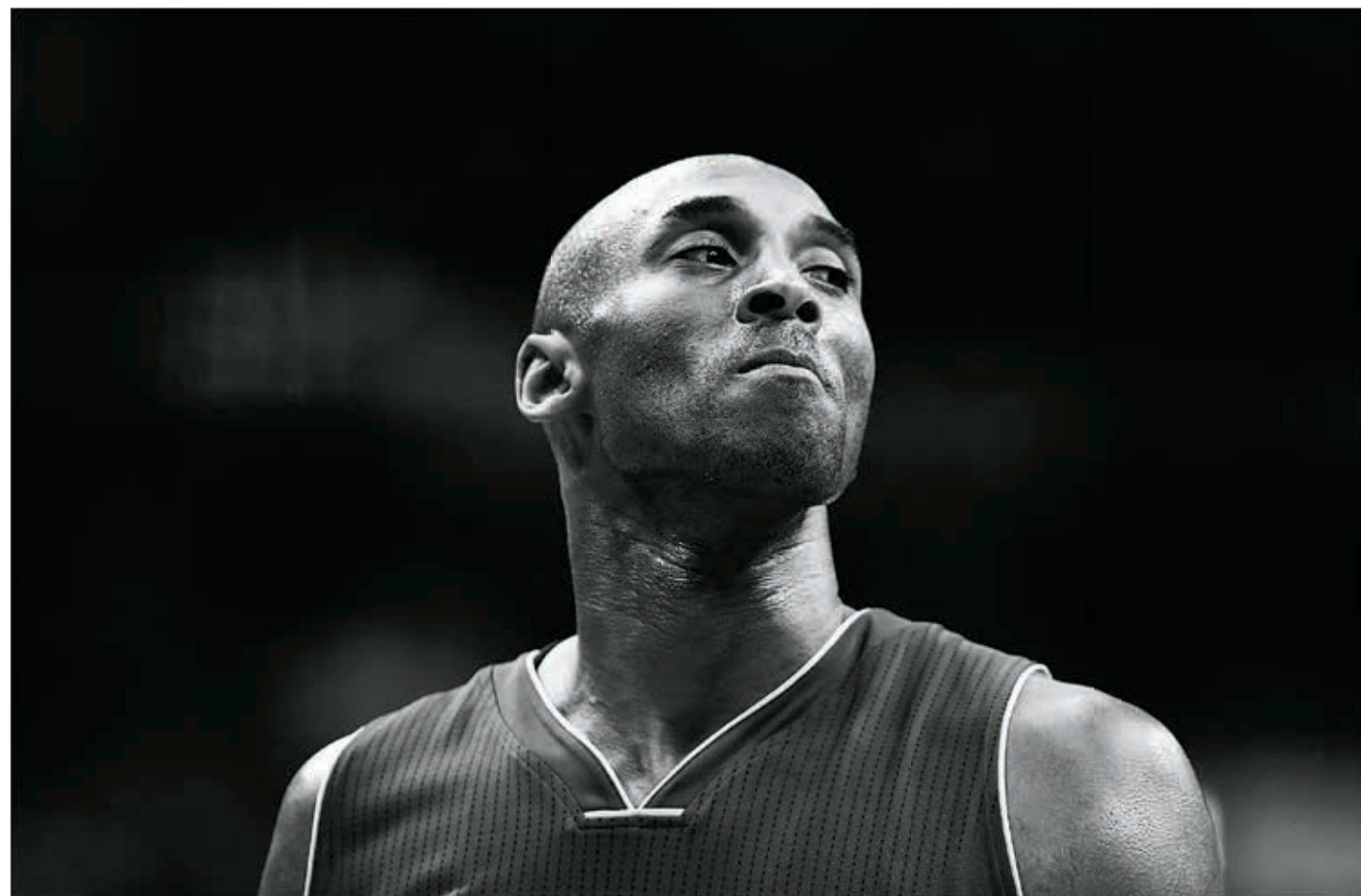
As a social psychologist, I'm not surprised by these reactions. I see three main factors that explain why Bryant's death had such a profound effect on so many people.

**1. Feelings Formed From Afar**  
Psychologists Shira Gabriel and Melanie Green have written about how many of us form what are called "parasocial bonds" with other people. These tend to be one-way relationships with people whom we've never met or interacted with, but nonetheless feel intimately connected to.

Although ideas about parasocial bonds were first developed in the 1950s, they've garnered a lot of attention over the past couple of decades. For example, loyal fans of Oprah Winfrey and Ellen DeGeneres watch their shows almost every day, with the hosts actively trying to build a warm rapport with their viewers and their audience subsequently developing intense feelings of attachment.

But interest in parasocial relationships has exploded in the age of social media. People who follow celebrities on Twitter and Instagram get access to their relationships, emotions, opinions, triumphs and traumas.

Even though it's a one-way relationship—what are the chances a celebrity actually responds to a fan's message on social me-



Kobe Bryant #24 of the Los Angeles Lakers looks up against the Washington Wizards in the first half at Verizon Center on December 2, 2015 in Washington.

dia?—fans can feel a profound level of intimacy with the famous people they follow. Kobe Bryant, with over 15 million followers on Twitter and nearly 20 million followers on Instagram, clearly had a massive following.

**2. The 'What If' Factor**  
Still, there was something about Bryant's death that seemed particularly tragic.

There's no way to measure whether the outpouring of public grief surpassed that of other celebrity deaths like Michael Jackson, Prince or Robin Williams. But it's certainly possible that the unique circumstances surrounding Kobe Bryant's death evoked stronger emotions.

**Bryant's death was a stark reminder that life's too short to hold onto petty grudges.**

Bryant died in a helicopter during extremely foggy conditions. This can lead to a lot of "what ifs," otherwise known as "counterfactual thoughts." Work by psychologists Daniel Kahneman and Amos Tversky has shown that when we can easily come up with ways to undo an outcome—say, "if it had been a clear day, Kobe would still be alive"—it can intensify the anger, sad-

ness or frustration about a negative event. It makes the death seem that much more random—and makes us feel like it never should have happened in the first place.

Furthermore, Bryant's 13-year-old daughter, Gianna, died in the accident, along with seven others. This broadens Bryant's identity beyond the basketball court, reminding people of his role as a father of four daughters—three of whom will now have to live without their sister and father.

**3. It's About Us, Not Him**  
I'd also add that our grief over Kobe's death may actually be less about him—and more about us.

According to "terror management theory," reminders of our own mortality evoke an existential terror. In response, we search for ways to give our lives meaning and seek comfort and reassurance by connecting with loved ones. I found it striking that following the news of Bryant's death, his former teammate Shaquille O'Neal said that he had called up several estranged friends in order to make amends. Bryant's death was a stark reminder that life's too short to hold onto petty grudges.

Similarly, after the loss of loved ones, we'll often hear people suggest hugging those we love tightly, or living every day to the fullest.

Many felt like they had gotten to know Bryant after watching him play basketball on TV for 20 years. His death was random and tragic, reminding us that we, too, will someday die—and making us wonder what we'll have to show for our lives.

**It's certainly possible that the unique circumstances surrounding Kobe Bryant's death evoked stronger emotions.**

Edward R. Hirt is a professor of psychological and brain sciences at Indiana University. This article is republished from *The Conversation*.



Fans can feel a profound level of intimacy with the famous people they follow.

# There's No Masking the Best Way to Avoid Coronavirus

Coronavirus is scaring up sales of face masks but to ward off the disease, focus on washing your hands

ELISABETH ROSENTHAL

Americans are watching with alarm as a new coronavirus spreads in China and cases pop up in the United States. They are barraged with information about what kinds of masks are best to prevent viral spread. Students are handing out masks in Seattle. Masks have run out in Brazos County, Texas.

**Having a mask with you as a precaution makes sense if you are in the midst of an outbreak.**

Hang on. I've worked as an emergency room physician. And as a New York Times correspondent in China, I covered the SARS outbreak in 2002 and 2003 during which a novel coronavirus first detected in Guangdong sickened more than 8,000 people and killed more than 800. My two children attended elementary school in Beijing throughout the outbreak.

Here are my main takeaways from that experience for ordinary people on the ground:

1. Wash your hands frequently.
2. Don't go to the office when you are sick. Don't send your kids to school or day care when they are ill, either.

Notice I didn't say anything about masks. Having a mask with you as a precaution makes sense if you are in the midst of an outbreak, as I was when out reporting in the field during those months. But wearing it constantly is another matter. I donned a mask when visiting hospitals where SARS patients had been housed. I wore it in the markets where wild animals that were the suspected source of the outbreak were being butchered, blood droplets flying. I wore it in crowded enclosed spaces that I couldn't avoid, like airplanes and trains, as I traveled to cities involved in the outbreak, like Guangzhou and Hong Kong. You never know if the guy coughing and

sneezing two rows ahead of you is ill or just has an allergy.

But outdoors, infections don't spread well through the air. Those photos of people walking down streets in China wearing masks are dramatic but the subjects appear uninformed. And remember if a mask has, perchance, intercepted viruses that would have otherwise ended up in your body, then the mask is contaminated. So, in theory, to be protected maybe you should use a new one for each outing.

The simple masks are better than nothing but not all that effective because they don't seal well. For anyone tempted to go out and buy the gold standard, N95 respirators, note that they are uncomfortable. Breathing is more work. It's hard to talk to people. On one long flight at the height of the outbreak, on which my few fellow passengers were mostly epidemiologists trying to solve the SARS puzzle, many of us (including me) wore our masks for the first couple of hours on the flight. Then the food and beverage carts came.

Though viruses spread through droplets in the air, a bigger worry to me was always transmission via what doctors call "fomites," infected items. A virus gets on a surface—a shoe or a doorknob or a tissue, for example. You touch the surface and then next touch your face or rub your nose. It's a great way to acquire illness. So after walking in the animal markets, I removed my shoes carefully and did not take them into the hotel room. And, of course, I washed my hands immediately.

Remember, by all indications SARS, which killed about 10 percent of those infected, was a deadlier virus than the new coronavirus circulating now. So keep things in perspective.

Faced with SARS, many foreigners chose to leave Beijing or at least to send their children back to the United States. Our family stayed, kids included. We wanted them with us and didn't want them to miss school, especially during what would be their final year in China. But equally important in making the decision was that

the risk of getting SARS on an airplane or in the airport seemed greater than being smart and careful while staying put in Beijing.

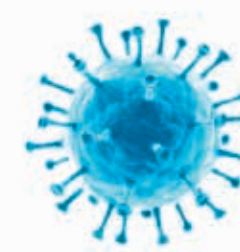
And we were: I stopped taking my kids to indoor playgrounds or crowded malls or delicious but densely packed neighborhood Beijing restaurants. Out of an abundance of caution, we canceled a family vacation to Cambodia—though my fear was less about catching SARS on the flight than that one of the kids would have a fever from an ear infection upon our return at a border screening and would be stuck in a prolonged quarantine in China. We instead took a vacation within China, where we carried masks with us but didn't use them except on a short domestic flight.

In time, during the SARS outbreak, the government shut down theaters and schools in Beijing, as it is doing now in many Chinese cities because these viruses are more easily transmitted in such crowded places.

But there was also a lot of irrational behavior: Entering



**By all indications SARS, which killed about 10 percent of those infected, was a deadlier virus than the new coronavirus circulating now.**



Masks might be all the rage when it comes to keeping microscopic pathogens from finding their way into our bodies, but washing our hands is far more important.



ALL IMAGES BY SHUTTERSTOCK

a village on the way to a hike near the Great Wall, our car was stopped by locals who had set up a roadblock to check the temperature of all passengers. They used an oral thermometer that was only minimally cleaned after each use. What a great way to spread a virus.

The International School of Beijing, where my children were students, was one of the few in the capital—perhaps the only one—that stayed open throughout the SARS outbreak, though the classes were emptier since so many kids had departed to their home countries. It was a studied but brave move because a parent at the school had gotten SARS at the very beginning of the outbreak on a flight back from Hong Kong. She recovered fine, but it was close to home and families were scared.

The school instituted a bunch of simple precautionary policies: a stern note to parents reminding them not to send a child to school who was sick and warning them that students would be screened for fevers with ear thermometers at the school door. There was no sharing of food at lunch. The teacher led the kids in frequent hand washing throughout the day at classroom sinks, while singing a prolonged "hand-washing song" to ensure they did more than a cursory pass under the faucet with water only.

If a family left Beijing and came back, the child would have to stay at home for an extended period before returning to class to make sure they hadn't caught SARS elsewhere.

With those precautions in place, I observed something of a public health miracle: Not only did no child get SARS, but it seemed no student was sick with anything at all for months on end. No stomach bugs. No common colds. Attendance was more or less perfect.

The World Health Organization declared the SARS outbreak contained in July 2003. But, oh, that those habits persisted. The best first-line defenses against SARS or the new coronavirus or most any virus at all are the ones that Grandma and common sense taught us, after all.

Elisabeth Rosenthal is a doctor, author, and editor-in-chief at Kaiser Health News, which first published this article.

# Steps to a Stronger Immune System

You can support the system that fights of disease with these habits

MOHAN GARIKIPARITHI

Your immune system is central to overall health, yet it can be easy to overlook. When thinking about good health, people tend to focus on their heart, muscle strength, weight, and bones.

Your immune system, however, compliments all of those components. A healthy immune system can help protect you from danger, toxins, infections, allergens, and more. Sometimes it can become overactive and attack healthy cells, leading to inflammation and chronic disease.

There is a growing body of research that indicates you can help manage and control your immune system. You may hold the power to increase its strength while keeping it in check if you have an autoimmune condition. As a result, you may experience less illness and improved symptoms.

There are five steps that can help build a healthy and functional immune system. They include:

**Eliminating immune-system weights:** Certain things can pull your im-

mune system down and leave you more susceptible to illness or painful symptoms. Smoking, excess alcohol and drug intake, and unprotected sun exposure can all beat your immune system down.

**Smoking, excess alcohol and drug intake can all beat your immune system down.**

**Focus on an anti-inflammatory diet:** Including more plant-based foods, like colorful fruits and vegetables, can help build a healthy immune system and limit inflammation. Limit foods commonly featured in the standard American diet, like fried foods, refined grains, high-sugar snacks, sweetened beverages, and processed meats.

**Exercise:** There is a relationship between exercise and immunity. Whereas moderate exercise for about 150 minutes

per week can reduce the risk of cold, flu, or other infections, being sedentary increases the risk of illness. Exercise can be performed in 10-minute bundles throughout the week if you don't have time to commit to a half-hour per day.

**Modify stressors:** Working on mental and spiritual health so you're less affected by stress and anxiety can also contribute to a healthy immune system. Stress wears you down and increases the chance of illness, so seeking therapy, practicing mindfulness, meditation, yoga, tai-chi, or other stress-relieving activities can all help with immunity.

**Good sleep:** Poor sleep is also a drag on the immune system. Failing to give your body adequate time to rest and recover makes it hard to stand up to the challenges of the day. Good sleep hygiene and a regular sleep schedule help you achieve better and more consistent sleep.

Mohan Garikiparithi holds a degree in medicine from Osmania University (University of Health Sciences). This article was originally published on Bel Marra Health.







Researchers found that the positive and negative effects of the diet both relate to immune cells called gamma delta T-cells, tissue protective cells that lower diabetes risk and inflammation.



## More Than a Week of Keto Might Not Be Good for You

Trendy high-fat, high-protein diet may offer greatest health benefits if practiced only short term

BRITA BELLI

A ketogenic diet—which provides 99 percent of calories from fat and protein and only 1 percent from carbohydrates—produces health benefits in the short term, but negative effects after about a week, research in mice shows.

The results offer early indications that the keto diet could, over limited time periods, improve human health by lowering diabetes risk and inflammation. They also represent an important first step toward possible clinical trials in humans.

The keto diet has become increasingly popular as celebrities, including Gwyneth Paltrow, LeBron James, and Kim Kardashian, have touted it as a weight-loss regimen—at least for periods of time.

In the study, researchers found that the positive and negative effects of the diet both relate to immune cells called gamma delta T-cells, tissue-protective cells that lower diabetes risk and inflammation.

A keto diet tricks the body into burning

fat, said lead author Vishwa Deep Dixit, professor of comparative medicine and of immunobiology at the Yale University School of Medicine. When the body's glucose level goes down due to the diet's low carbohydrate content, the body acts as if it is in a starvation state—although it is not—and begins burning fats instead of carbohydrates. This process in turn yields chemicals called ketone bodies as an alternative source of fuel. When the body burns ketone bodies, tissue-protective gamma delta T-cells expand throughout the body.

This reduces diabetes risk and inflammation, and improves the body's metabolism, said Dixit. After a week on the keto diet, he said, mice show a reduction in blood sugar levels and inflammation.

But when the body is in this “starving-not-starving” mode, fat storage is also happening simultaneously with fat breakdown, the researchers found. When mice continue to eat the high-fat, low-carb diet beyond one week, Dixit said, they consume more fat than they

can burn, and develop diabetes and obesity.

“They lose the protective gamma delta T-cells in the fat,” he said.

Long-term clinical studies in humans are still necessary to validate the anecdotal claims of keto's health benefits.

“Before such a diet can be prescribed, a large clinical trial in controlled conditions is necessary to understand the mechanism behind metabolic and immunological benefits or any potential harm to individuals who are overweight and prediabetic,” Dixit said.

There are good reasons to pursue further study: According to the Centers for Disease Control, approximately 84 million American adults—or more than one out of three—have prediabetes (increased blood sugar levels), putting them at higher risk of developing type 2 diabetes, heart disease, and stroke. More than 90 percent of people with this condition don't know they have it.

“Obesity and type 2 diabetes are lifestyle diseases,” Dixit said. “Diet allows people a way to be in control.”

With the latest findings, researchers now better understand the mechanisms at work in bodies sustained on the keto diet, and why the diet may bring health benefits over limited time periods.

“Our findings highlight the interplay between metabolism and the immune system, and how it coordinates maintenance of healthy tissue function,” said Emily Goldberg, the postdoctoral fellow in comparative medicine who discovered that the keto diet expands gamma-delta T cells in mice.

Dixit said it will be good news if later studies discover the ideal length of the keto diet for health benefits is relatively short.

“Who wants to be on a diet forever?”

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