

WEEK 28, 2019

THE EPOCH TIMES

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FOOD IS MEDICINE

The Future of Nutrition Is Personal

Gut bacteria is unique to each person, which means everyone processes fat and sugar differently



TIM SPECTOR

Humans are complicated, and there are many things that influence our health. There are things we can't change, like our age or genetic makeup, and the things we can, such as our choice of food and drink. There are also the trillions of bacteria that live in our guts—collectively known as the microbiome—that have a significant impact on our health and digestion.

The foods we eat are mixtures of many nutrients that affect the body and microbiome in different ways, so unraveling the relationship between diet, metabolism, and health is no simple matter. A new study from the University of Minnesota adds yet another layer of complexity, showing that foods that have comparable nutritional profiles can have very different effects on the microbiome.

Feeding the 5 Trillion

While we know that a more diverse microbiome is usually an indicator of better gut health, we understand little about how specific foods affect the abundance of different microbial species.

In their recent study, the Minnesota team asked 34 healthy volunteers to collect detailed records about everything they ate over 17 days, mapping this information against the diversity of microbes in daily stool samples. As expected, although there were several foods that were eaten by most of the participant—such as coffee, cheddar cheese, chicken and carrots—there were plenty of choices that were unique.

The researchers found that while each participant's food choices affected their own microbiome, with certain foods boosting or reducing the abundance of particular bacterial strains, there wasn't a straightforward correlation that carried over between people. For example, beans boosted the proportion of certain bacteria in one person but had far less effect in another.

Intriguingly, although closely related foods

Less than 30 percent of the variation between people's sugar responses is due to genetic makeup and less than 20 percent for fat.



Identical twins shared only around 37 percent of their gut microbes.

(such as cabbage and kale) tended to have the same impact on the microbiome, unrelated foods with very similar nutritional compositions had strikingly different effects. This tells us that conventional nutritional labeling may not be the best way of judging how healthy a food is likely to be.

The results also show that making dietary recommendations for improving the microbiome won't be simple and will need to be personalized, taking into account a person's existing gut microbes and the effects of specific foods on them.

Go Large

The microbiome is probably the hottest topic in nutrition and health right now, with researchers keen to map and manipulate our bacterial friends. But it's not the whole story.

My team at King's College London is collaborating with researchers at Massachusetts General Hospital and a company called ZOE to run PREDICT, the largest nutritional science study of its kind anywhere in the world. The aim of PREDICT is to unpick all the complex interacting factors that affect our unique responses to food, especially the regular peaks in sugar and fat levels in the blood that are linked to long term to weight gain and disease.

We've been studying personal nutritional responses to food in 1,100 volunteers from the United Kingdom and the United States, including hundreds of pairs of twins, measuring their blood sugar (glucose), insulin, fat levels (triglycerides) and other markers in response to a combination of standardized and freely chosen meals over two weeks. We also captured information about activity, sleep, hunger, mood, genetics and, of course, the microbiome, adding up to millions of data points.

The initial results, presented at the American Diabetes Association and American Society for Nutrition meetings earlier this month, came as a big surprise. We discovered that individuals have repeatable, predictable nutritional responses to different foods, de-

pending on the proportions of protein, fat, and carbohydrates. But there were wide variations between people (up to eightfold), making a mockery of "averages"—even among identical twins who share all their genes.

Less than 30 percent of the variation between people's sugar responses is due to genetic makeup and less than 20 percent for fat. Unexpectedly, there was only a weak correlation between the two: having a bad response to fat couldn't predict whether someone would be a good or bad responder to sugar.

We also discovered that identical twins shared only around 37 percent of their gut microbes. This is only slightly higher than that shared between two unrelated people, underscoring the modest effect of genes.

You Do You

We all have personal tastes and preferences when it comes to food, so it makes sense to assume that our personal metabolisms and responses to the foods we eat should be different too. But we're only now coming to the point where scientific research is catching up with this gut feeling, proving that everyone is unique and that there is no one true diet that works for all.

This research shows that if you want to find the foods that work best with your metabolism, then you need to know your personal nutritional response—something that can't be predicted from simple genetic tests.

Of course, there are healthy eating messages that apply to everyone, such as eating more fiber, increasing diverse plant-based foods, and cutting down on ultra-processed products. But the take-home message is that there is no one right way to eat that works for everyone, despite what government guidelines and glamorous Instagram gurus tell you.

Tim Spector is a professor of genetic epidemiology at King's College London in the UK. This article was first published on The Conversation.

If you want to find the foods that work best with your metabolism, then you need to know your personal nutritional response.

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Analysis Why Alexa's Bedside Manner Is Bad for Health Care

Digital doctors could lower the quality of care in an already challenged health care industry

It remains an open question whether virtual medicine will prove a valuable, convenient adjunct to health care.



ELISABETH ROSENTHAL

Amazon has opened a new health care frontier: Now Alexa can be used to transmit patient data. Using this new feature—which Amazon labeled as a "skill"—a company named Livongo will allow diabetes patients—which it calls "members"—to use the device to "query their last blood sugar reading, blood sugar measurement trends, and receive insights and Health Nudges that are personalized to them."

Private equity and venture capital firms are in love with a legion of companies and startups touting the benefits of virtual doctors' visits and telemedicine to revolutionize health care, investing almost \$10 billion in 2018, a record for the sector.

Without stepping into a gym or a clinic, a startup called Kinetxx will provide patients with virtual physical therapy, along with messaging and exercise logging. And Maven Clinic (which is not actually a physical place) offers online medical guidance and personal advice focusing on women's health needs.

In April, at Fortune's Brainstorm Health conference in San Diego, Bruce Broussard, CEO of health insurer Humana, said he believes technology will help patients receive help during medical crises, citing the benefits of home monitoring and the ability of doctors' visits to be conducted by video conference.

But when I returned from Brainstorm Health, I was confronted by an alternative reality of virtual medicine: a \$235 medical bill for a telehealth visit that resulted from one of my kids calling a longtime doctor's office. It was for a five-minute phone call answering a question about a possible infection.

Virtual communications have streamlined life and transformed many of our relationships for the better. There is little need anymore to sit across the desk from a tax accountant or travel agent or to stand in a queue for a bank teller. And there is certainly room for disruptive

digital innovation in our confusing and overpriced health care system.

But it remains an open question whether virtual medicine will prove a valuable, convenient adjunct to health care. Or, instead, will it be a way for the U.S. profit-driven health care system to make big bucks by outsourcing core duties—while providing a paler version of actual medical treatment?

After all, my doctors have long answered my questions and dispensed phone and email advice for free—as part of our doctor-patient relationship—though it didn't have a cool branding moniker like telehealth. And my obstetrician's office offered great support and advice through two difficult pregnancies—maybe they should have been paid for that valuable service. But \$235 for a phone call (which works out to over \$2,000 per hour)? Not even a corporate lawyer bills that.

Logic holds that some digital health tools have tremendous potential: A neurologist can view a patient by video to see if lip-sided facial movements suggest a stroke. A patient with an irregular heart rhythm could send in digital tracings to see if a new prescription drug is working. But the tangible benefit of many other virtual services offered is less certain. Some people may like receiving feedback about their sleep from an Apple Watch, but I'm not sure that's medicine.

And if virtual medicine is pursued in the name of business efficiency or just profit, it has enormous potential to make health care worse.

My doctor's nurse is far better equipped to answer a question about my ongoing health problem than someone at a call center reading from a script. And, however thorough a virtual visit may be, it forsakes some of the diagnostic information that comes when you see and touch the patient.

A study published recently in Pediatrics found that children who had a telemedicine visit for an upper-respiratory infection were far more likely to get an antibiotic than those who physically saw a doctor, suggesting overprescribing is at work. It makes sense: A doctor

can't use a stethoscope to listen to lungs or wiggle an otoscope into a kid's ear by video. Similarly, a virtual physical therapist can't feel the knots in muscle or notice a fleeting wince on a patient's face via camera.

More important, perhaps, virtual medicine means losing the support that has long been a crucial part of the profession. There are programs to provide iPads to people in home hospice for resources about grief and chatbots that purport to treat depression. Maybe people at such challenging moments need—and deserve—human contact.

Of course, companies like those mentioned are expecting to be reimbursed for the remote monitoring and virtual advice they provide. Investors, in turn, get generous payback without having to employ so many actual doctors or other health professionals. Livongo, for instance, has raised a total of \$235 million in funding over six rounds. And, as of 2018, Medicare announced it would allow such digital monitoring tools to "qualify for reimbursement," if they are "clinically endorsed." But, ultimately, will the well-being of patients or investors decide which tools are clinically endorsed?

So far, with its new so-called skill, Alexa will be able to perform a half-dozen health-related services. In addition to diabetes coaching, it can find the earliest urgent care appointment in a given area and check the status of a prescription drug delivery.

But it will not provide many things patients desperately want, which technology should be able to readily deliver, such as a reliable price estimate for an upcoming surgery, the infection rates at the local hospital, the location of the cheapest cholesterol test nearby. And if we're trying to bring health care into the tech-enabled 21st century, how about starting with low-hanging fruit: Does any other sector still use paper bills and faxes?

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

New Research Challenges Dark Meat's Unhealthy Reputation

MOHAN GARIKIPARITHI

When it comes to taste, give me a slab of prime rib or a thick steak on the grill over a chicken breast any day of the week. But for health purposes, maybe I'll stick with the chicken—or so traditional wisdom goes.

A new report published in the American Journal of Clinical Nutrition suggests it doesn't matter if you eat white meat over dark. As far as heart health and cholesterol goes, it seems like dark meat is just as healthy as white meat.

The long-held belief that white meat is healthier stems from a series of observational studies showing associations between red meat intake and cardiovascular disease risk. Red meat is generally higher in saturated fats, thereby boosting blood cholesterol and increasing the risk of heart disease.

Researchers decided to take a closer look using a specialized trial. They divided healthy men and women into two groups: those that regularly ate high levels of saturated fats and those that didn't. Those groups were then split randomly into three more: one that was fed red meat, one that was fed white meat, and one that was fed plant-based proteins.

After the four-week intervention, blood cholesterol levels were the same in both meat groups, and as you might imagine, much lower in the plant-based protein group. Blood cholesterol levels—and particularly "bad" LDL—did not go up in either meat group, regardless of how much saturated fat they ate during the study. This is likely due to the fact that saturated fats in red and white meat are "neutral" in the body. Less dense LDL particles that float around the blood increased, but they do not accumulate on arterial walls and boost the risk of heart disease. According to current knowledge, they have no influence on health.

So, don't feel like you have to reach for the chicken when you really want a steak—it likely won't make a difference. But try eating more vegetables and leave the refined carbs alone!

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

FOOD TRAVEL STOCK FOR LIFE / SHUTTERSTOCK



White meat was supposed to be healthier, but new research suggests the difference between white and dark meats isn't significant.

Breathe Easier With Raspberry and N-Acetylcysteine

Treat or prevent COPD naturally with some dietary changes that can provide an added layer of protection

KAT CARROLL

Chronic obstructive pulmonary disease (COPD) is a frightening and disheartening diagnosis. And while there is no cure, there are natural options to help treat the disease that can be taken alone or alongside medication.

COPD is characterized by ongoing breathing problems, restricted airflow, and productive coughs. The disease usually grows worse, leading to long-term disability and early death.

It is both wise and vital to protect your lungs against COPD. Both indoor and outdoor air pollution have strong correlations to COPD. Smoking can exacerbate the disease by generating oxidant

radicals capable of modifying the structure of the respiratory tract and increasing lung inflammation in COPD.

The 1960s saw the tobacco industry expand the smoking market by targeting women. Perhaps not coincidentally, more women now die from COPD than men, though research indicates that is likely due to women having smaller lungs and more estrogen, a hormone that may exacerbate lung disease.

COPD is also often diagnosed too late when the disease has become advanced. Early warning signs such as shortness of breath are often written off as "just a part of aging." That's unfortunate because COPD is the third leading cause of



UNSPASH

death by disease in the United States. Over 11 million people have been diagnosed with COPD and many others have the disease but don't realize it.

Levels of inflammatory cytokines are raised in COPD and oxidants play a strong role in the development of the disease. A diet rich in antioxidant vitamins such as N-acetylcysteine (NAC) can counter oxidative stress and may protect against developing COPD. High-dose oral NAC is also used alongside COPD medication as an additional therapy for COPD patients.

The antimicrobial and antibacterial activity of fruits, such as raspberries, is well documented in research. Compounds in raspberries significantly alter cytokine and antioxidant production. *Corynebacterium diphtheriae* and *Moraxella catarrhalis* proved to be the most sensitive to raspber-

ry extracts. The pharmacological actions of raspberries also helped with pneumonia, lower respiratory infections, and treat ear infections.

These two simple additions, NAC and raspberries, can provide nutritional upgrades that can potentially stave off COPD.

Kat Carroll is executive director of the National Health Federation and managing editor of the National Health Federation's magazine, Health Freedom News, and is on the board of directors of the National Health Federation Canada and the advisory board for GreenMedInfo. This article was originally published on GreenMedInfo.com

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Bodily Benefits of LINEN BEDDING

LISA COLLINS

Organic products have long been a popular trend in food, but now they're taking over the home decor industry as well, and for good reason. Sustainably sourced, organic home goods not only last longer and use fewer chemical additives, but they can also benefit you in other ways as well.

Linen sheets, for example, have long been a staple in many homes, but organic linen sheets are starting to replace traditional linen fabrics. If you're looking to create a more sustainable and organic environment within your home, organic linen is definitely a fabric that you should invest in. But before you go out and buy just any organic linen sheets, here's a short guide to help you better understand the many benefits that linen has to offer.

Why Linen?

Before we dive a little deeper into the benefits of organic linen sheets, you first need to understand a little bit about the fabric itself. Linen is created using fibers from the flax plant and has been used since ancient times. In fact, ancient Egyptians frequently used this fabric for clothing because of its excellent quality and breathability.

Buying linen might be a bit of a change for you, especially if you're used to judging fabrics by their high thread count. Because cotton is a very fine fiber, cotton sheets typically feature a higher thread count. However, linen consists of much thicker fibers, and as a result, a lower thread count certainly doesn't mean lower quality or comfort.

Linen Is an Excellent Temperature Regulator

No matter what kind of climate you live in, keeping your body within a certain temperature range can vastly improve your sleep. It might seem like a good idea to have multiple sets of sheets made

from varying materials, but in reality linen takes all of those fabrics to the cleaners when it comes to temperature regulation. Not only does linen have a heat conductivity rating five times higher than wool, it helps you maintain cooler body temperatures by approximately four degrees when compared to cotton or silk. Linen really is the fabric that can do it all.

Linen Lasts a Lifetime

As previously stated, linen fibers are much thicker than those of cotton and other materials commonly used to make bedsheets. And, unlike other fabrics, linen actually becomes stronger with each wash. That means you can machine wash your linen sheets as often as you want without fear of the fabric wearing out. For a wonderfully clean sleeping experience, organic linen sheets are usually your best option.

Gentle on Sensitive Skin

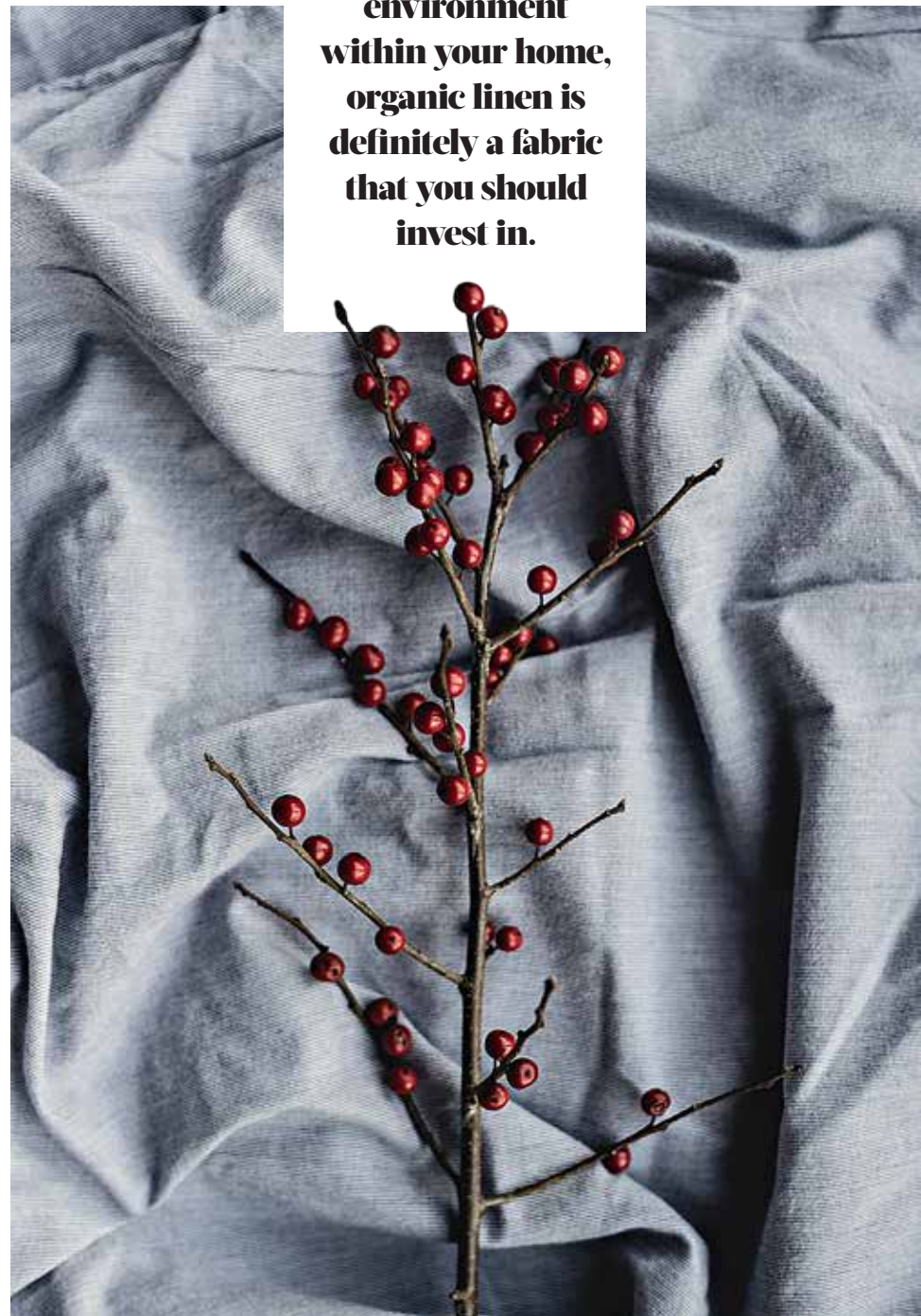
When you're picking out bed sheets, you need to consider that we spend around one-third of our lives sleeping. That means you're going to be seeing a lot of whatever sheets you end up choosing. Just as you nourish the inside of your body with organic foods, you should nourish the outside of your body with organic fabrics. And organic linen sheets are extremely gentle on the skin. Even people with the most sensitive skin can find comfort in linen sheets.

Purchasing organic products ensures that manufacturers around the world are using safer, more sustainable practices to create them. You're doing a service to those manufacturers by purchasing their product, but when it comes to linen, you're doing an even better service to yourself. Once you make the switch, you may find yourself unable to go back.

If you're looking to create a more sustainable and organic environment within your home, organic linen is definitely a fabric that you should invest in.

Lisa Collins is a writer for *NaturallySavvy.com*, which first published this article.

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JOSHUA RAWSON-HARRIS/UNSPLASH

NEW INSIGHTS ON

Gut Permeability and Depression

Depression and 'leaky gut' form dangerous feedback loop, warn researchers

KELLY BROGAN

If you know what depression feels like—the brain clouding, the flat moods, the tiredness—you're not alone. Over 300 million people around the world have depression, and yet there's a lot that we still don't quite understand.

Thankfully, the medical field is developing some new insights that just might help us understand depression better. In a new 2019 study, researchers decided to examine the potential mechanisms of major depressive disorder in teenage girls and found some evidence that could help us better understand exactly how gut permeability (leaky gut) can lead to inflammation, which in turn, leads to depression.

New Insight Into Leaky Gut and Depression

In this 2019 study, Baylor College of Medicine researchers are directly looking at gut permeability and major depressive disorder, a study that is the first of its kind.

With a sample of forty-one 12-17-year-old teenage girls who were medically healthy, the study measured the severity of the girls' depressive symptoms, the activity of the autonomic nervous system, intestinal permeability, or gut leakiness, and the number of inflammatory cytokines.

To measure whether the girls were depressed, an interviewer performed the Children's Depression Rating Scale-Revised (CDRS-R) and a clinical interview. The CDRS-R is a rating scale that requires interviews of both child and parent to understand the severity of a child's depression. Over the past few decades, the CDRS-R has become the most widely used rating scale for assessing severity and change in depression for clinical trials involving children and adolescents.

In order to collect data on the autonomic nervous system activity, researchers measured pre-ejection period (PEP) and respiratory sinus arrhythmia (RSA) data, which are indicators for the activity levels of the sympathetic nervous system and parasympathetic nervous system respectively.

They measured the leakiness of the gut using the lactulose-mannitol ratio (LMR), which involves having the teens first fast overnight and then ingest a premeasured amount of lactulose and mannitol.

The researchers then collected the urine for four hours after ingestion. By looking at the ratio of lactulose and mannitol that passed through the gut lining, researchers could calculate the permeability of the gut lining, or how "leaky" it was.

To measure inflammation, the researchers took blood samples and measured inflammatory cytokines.

They found that in unmedicated teenage girls between the ages of 14-17, depression severity was associated with increased intestinal permeability, as measured by the lactulose to mannitol ratio.

The leakier the gut, they found, the more

severe the depression and depressive symptoms.

They saw that the higher the concentration of the cytokine IL-1 β , the more severe the depression. They also found that increased intestinal permeability may be the path between sympathetic nervous system activation and depression severity.

Additionally, their evidence suggested that increased intestinal permeability may activate the innate immune system and push the development of depression.

The result of this study also helps clarify the mechanisms through which activating the sympathetic nervous system can increase gut permeability and activate the innate immune system—two things that are likely contributing to depression symptoms.

The Brain, the Gut, and the Immune System

If you're wondering why intestinal permeability is related to depression, let's back up and walk through the whole pipeline.

We start with the immune system. Throughout the last century, psychiatry has been exploring the role of the immune system in certain presentations of depression. Importantly, the gut houses over 70 percent of our immune system, which makes sense given that the lining of your gut is the barrier between your insides and the outside world.

The gastrointestinal epithelium usually forms a single-cell-thick barrier that prevents the free movement of toxicants, microbes, and microbial antigens from entering into the rest of your body. This lining usually does a good job absorbing things we need (like food) and interfacing with foreign things that might wreak havoc—which is probably why most of our immune cells are located in the gut.

The relationship between the gut and the brain is both complex and important.

We've all felt the butterflies in our stomachs when we're nervous or anxious, but it turns out that the relationship between the brain and the gut is actually bidirectional. Not only can our brains affect how our guts feel, but our gut can relay its state of calm or alarm to the nervous system and send those immune reactions up the vagus nerve to the brain.

To understand how the gut and depression are related, we should first better comprehend the triggers for inflammation, what inflammation is, and how it happens.

Stress Drives Inflammation

So what is inflammation in the first place? Inflammation is the body's defensive response to stresses, like injury or eating inedible chemicals. Upon approaching a stressor, the immune system kicks into a higher gear to heal the body.

Stress is a catch-all term, a trigger that links hormones to inflammation. Essentially, when the body thinks something is wrong, the body releases hormones that tell the body to be on the defensive, and inflam-

Researchers have found another contributing factor to depression—gut permeability. Researchers found teenage girls with a leaky gut, which is when toxins or bacteria can leak through the intestinal wall and into the bloodstream, were more likely to be depressed.

mation occurs.

These triggers can come in all forms, many of which are actually staples of modern American life, from sugar, to stress, to pesticides and pollution, to anxiety, and so on.

Whether psychological or physiological, stress drives the inflammation response by telling the brain to release cortisol, the steroid hormone that acts as nature's built-in alarm system. Our body makes it so we can use blood sugar for immediate energy and flee or fight whatever is causing the stress.

Once inflammation is started, not only does inflammation cause more inflammation, but recent studies have linked low-grade inflammation to depression.

When inflammation reaches the brain, cells begin to take their limited supply of tryptophan to produce more anxiety-provoking chemicals like quinoline.

Medical literature has found that inflammation seems to be a consistent marker of depressive symptoms, like flat mood, slowed thinking, avoidance, alterations in perception, and metabolic changes.

How Does Inflammation Get Provoked in the Gut?

So let's understand how exactly a leaky gut can lead to inflammation—the body's language of imbalance.

When the body is stressed, the junctions between cells in the stomach can be less effective than they should be. This allows bacteria and toxicants to enter the bloodstream. That can then cause widespread inflammation and possibly trigger a far-reaching reaction from the immune system. If leaky gut causes inflammation, it sets off a problematic chain of events because the gut has a direct link to the brain through the vagus nerve.

The medical field has been slowly reaching a fuller understanding of the link between intestinal permeability ("leaky gut") and depression.

Previous studies focused on depression found the chemical hints of leaky gut. For example, one study showed that patients with a recent suicide attempt had higher concentrations of an anti-lipopolysaccharides (LPS) antibody, meaning that the immune system had either encountered more of or reacted defensively against LPS, which is a molecule that marks microbe-associated patterns in the body.

In another study, compared to healthy controls, adults with depression or anxiety disorders, but who didn't have any symptoms of gastrointestinal disorders, still had higher concentrations of fatty acid-binding protein-2, which is produced to signify impaired intestinal epithelium integrity. These studies and the first study we discussed in this post suggest that intestinal permeability may be impaired in depression.

So What Do We Do?

All of this sounds kind of complicated, but really, this approach to depression—seeing it as a symptom that results in unhealthy inflammatory balance—means that we might be able to do more about it. It means that depression isn't happening because of genetics or not enough serotonin. Instead, you're probably experiencing low-grade inflammation that's happening because your gut is stressed and leaky. The goal is to send your system a signal of safety—from the gut, from the mind, or by lessening perceived stressors and burdens through detox.

Editor's note: Depression is not only a result of biochemical reactions, as the wording of some research sometimes implies. It is, of course, often a response to profound distress or devastating experiences and observations, as well as certain lifestyles, behaviors, and thought patterns.]

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BETTER WAYS TO BOOST ENERGY

Coffee, energy drinks, and snacks have nothing on these natural energy boosters

MOHAN GARIKIPARITHI

The typical response to feeling tired or lethargic is usually one of the following: reach for a coffee or energy drink or sit down and relax. Of course, none of those things will do much for your overall energy levels, and they could lead to potential health risks and complications.

If you need a brief pick-me-up or an overall boost in energy levels, the natural method is best. It involves getting more sleep, identifying and coping with stressors, being more active, and knowing how to make the proper food choices. Doing those things can lead to more energy at any age and provide some sustainability for you to get out and enjoy yourself.

BETTER SLEEP

If you're not sleeping well, it's impossible for your brain and body to fully recharge. Getting a good night's sleep sets your day up and gives you the energy you need to live your best life. Practice good sleep hygiene by avoiding stimulation too close to bed, which includes looking at bright screens, eating, arguing, or being active. Also, makes sure your

bedroom is dark and comfortable.

STRESS MANAGEMENT

If you're regularly under stress, it can suck away your energy. A little bit of stress from time to time can offer adrenaline, but too much has the opposite effect. Dealing with stressors head on, using meditation or mindfulness, and exercising can all help deal with stress to increase energy levels.

INCREASE ACTIVITY

It might sound counter-intuitive but spending too much time sitting can zap your energy, and getting active can stimulate energy levels. So, next time you're feeling fatigued, strap on your

Using meditation or mindfulness, and exercising can all help deal with stress to increase energy levels.

sneakers and go for a walk or bike ride. It can be as effective as a cup of coffee and lead to more long-term increases in energy.

EAT RIGHT

Some food can promote energy, while other food can suck it from your system in a moment. For example, refined carbohydrates might be described as "high energy" and may provide a quick pick me up, but what about 30 minutes later when you come down? Chocolate bars, muffins, and other sugary snacks are no good for energy levels. On the other hand, whole grains or "complex carbs" can release energy slowly so blood sugar stays stable and you're able to go for longer without the crash.

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



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ALORA GRIFFITHS/UNSPLASH



Ask yourself **WHAT VOID** you are trying to fill.

The Emotional Side Of Money

How stress, fear, and denial can hurt our health and our bottom line

CONAN MILNER

Money is basically a unit of measurement, but it covers a lot of ground. Strictly speaking, money measures the market value of goods, services, and investments. But it can also function as a measure of our self-worth. It can reveal fears about not having enough, resentment for having less than you feel you deserve, or guilt for not being able to provide the standard of living you want.

It's hard to translate these emotional reactions to money into dollars and cents. But left unresolved, they may have an even bigger impact on the stability of our personal finances than how much we earn.

CPA and personal finance coach Ben Watson has seen clients from a wide range of ages and incomes. He also works for a personal finance blog geared towards the particular money issues millennials face.

Watson previously worked at an

People often develop dysfunctional ideas about money in their childhood.

accounting firm, but he left that job because he noticed his clients needed more than what traditional financial services could provide.

"People keep sinking deeper and deeper into debt, but they can't figure out why they can't stop spending," Watson said. "It's the emotions, the stress, and the lack of sleep that really drives people to ask for help. Not because they can't get another credit card."

While some of Watson's clients lack basic financial literacy, several come from a background in finance. But this knowledge still doesn't save them from compulsive overspending.

"It doesn't matter if you make 30 grand a year or 500 grand a year," Watson said. "If you're spending more than you earn, it's never going to get better. It's only going to spiral further and further out of control."

According to Watson, the vast majority of the financial problems people struggle with stem not from numbers, but from emotions. It can be hard to

make ends meet, but it becomes even harder when so much of your income goes toward things like stress relief or maintaining an image.

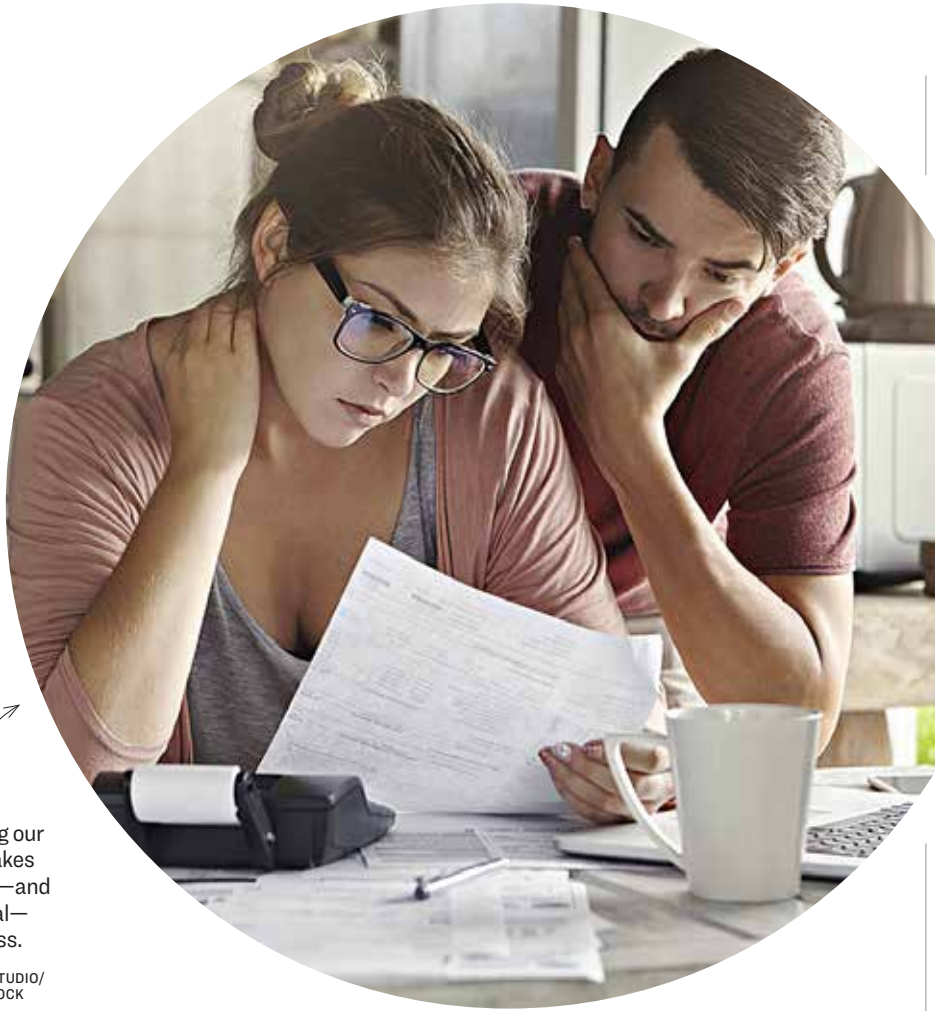
"I have clients who live in very nice apartments, but in everything else, they're living way below what they think they deserve," Watson said. "They can't afford to go out to eat or take a vacation. They can't go to a friend's wedding without putting it on a card."

Like most of our stubborn, ingrained behaviors, people often develop dysfunctional ideas about money in their childhood. For some, it comes from growing up poor and feeling deprived. For others who got anything they wanted as a child, they may end up with an inflated sense of self-worth, or develop a notion that material objects are a stand in for love. Whatever the financial backstory, many of these individuals turn into adults who spend way beyond their means in an attempt to feel better about themselves.

Continued on Page 8

The Emotional Side of Money

How stress, fear, and denial can hurt our health and our bottom line



Managing our money takes financial—and emotional—awareness. WAYHOME STUDIO/SHUTTERSTOCK

Continued from Page 7

"Especially for fathers or men who are in relationships, it's almost as if they view finances as a scorecard," Watson said. "They think that if you can't give the things to your wife and kids that you want to, it feels like they're losing the game."

Driven to Spend
Part of our relationship with money is formed by watching how our parents handled their finances. Another part is shaped by the conflicting cultural messages we confront. Money is said to be the root of all evil, and yet we celebrate and yearn for wealth. We're advised to save, and yet we're constantly urged to spend.

Add all these aspects together, and it's clear why finances can be such a huge stress. According to an American Psychological Association study, over 70 percent of Americans said they felt stressed about money. Over 20 percent classified their financial stress as extreme.

Ironically, many of us combat this stress with retail therapy: buying things we don't need with money we don't have in order to lift our spirits.

Financial adviser Amy Keller says most of us seek an occasional treat. The problem comes when we don't realize how close those intervals are. Doing something nice for yourself every once in a while can be part of good self-care, but splurging several times a month as a way to cope with life really adds up.

Keller says that if there is a sale or deal attached to the treat, we feel even more justified in taking it, despite looming financial burdens just over the horizon.

"A young woman was just telling me that she and her husband want to have a baby soon, and they want to buy a house," Keller said. "Her friend offered her a great trip opportunity to Italy. She said, 'It's just so cheap. How can I say no?' I said, 'Because you just told me two things that are more important than the trip to Italy. I don't care what a deal it is.'"

It's fun to imagine how nice life would be if money was no object. But in reality, it's a hassle to get, and you always require a steady supply of it coming in.

"Somebody else has to give it to you, which can make it a little unsettling because you have to hope that it comes through," Keller said. "You're at the mercy of this, and if it doesn't come through, it's a big deal."

If you're spending more than you earn, it's never going to get better.

Ben Watson, CPA and personal finance coach

Ironically, many of us combat financial stress with retail therapy.

Successful money management involves basic math and delayed gratification.

Elisa Robyn, academic dean of Arts and Sciences, and of Contemporary Liberal Studies, Regis University

People have been forced to face these concerns since the currency was invented. But Keller says that today we must face two relatively new forces that constantly beckon us to give up the money we work so hard to make. The first is an easy credit. Today, you can casually blow through thousands of borrowed dollars. But if you can't pay it off right away, the immediate consequences don't seem so bad.

"This wasn't true in our grandparents' generation," Keller said. "Today, when people have credit card debt, there is no repo man who comes to the door with a rifle. It's a far away punishment. It's not fun, but you have a lot of time to pay it off."

The other force that urges us to buy like never before is the consumerist paradise we inhabit. At no point in human history has there been so many spending opportunities in such close reach. Online shopping takes these forces to the next level. Our favorite stores send texts and emails alerting us to their latest sales and remind us that we need to treat ourselves. Once we click our way to the site, the purchase is virtually painless.

"They make it so easy," said Keller. "Websites save your credit card information. You don't have to feel the pain of having to decide. You don't have to pull out your credit card and go through the work of typing it all in. Amazon has a one-click feature."

Compare this to the not-so-distant past, where what you bought was strictly limited to how much cash you carried.

If something cost more than what you had on hand, you were forced to get more, or simply decide it wasn't worth the trouble and go without. A lot of those barriers have nearly evaporated today, and for people who have little money or financial experience, it can spell big trouble. Watson says that students who take out loans to pay for college essentially sign up for a mortgage, but they have no idea what they're getting into until it's too late.

"It used to be when you were going to buy a house, it would take a few months to get the closing. You would go through all this paperwork to make sure you could afford it," Watson said. "With college loans, a lot of people didn't really know what it was going to cost until after they graduated."

There is no shortage of student debt horror stories, but Watson believes some have a bright side. He says the experience can give many millennials a financial wake-up call to get their act together.

"Some stick their head in the sand further and get in more trouble, but a lot of them are starting to wake up and realize: I was never taught this. I need to figure out how to do this," Watson said.

Make Money Real Again
When money worries weigh us down, we dream of striking it rich. But a bigger bank account is no guarantee that our money problems will vanish. Why do a third of lottery winners end up declaring bankruptcy within just a few years of their windfall? Perhaps it's because, in addition to all the mandatory bills we have to pay, we're also trying to buy off a void inside us. According to Elisa Robyn, at the bottom of many of our money problems is a broken heart. Until we can address this emotional wound we will try to soothe it by spending.

"The wound or broken heart will find us spending money we do not have to feel rich. We will give up on the future, assuming that unless we are rich we

will have to work until we die," Robyn said.

Robyn is a dean at Regis University, but she recently took aim at a new goal: helping people find real prosperity. She says people are tempted by get rich quick schemes because they can't cope with what they really need to get their finances under control.

"Successful money management involves basic math and delayed gratification, both of which are difficult for many people to embrace," Robyn said. "We do not understand that we have to build a healthy relationship with money if we wish to be financially secure."

"But this realization has to come from inside. Try advising someone to cut back on their spending. Even if they're flat broke, they're more likely to be insulted than inspired. According to Watson, the first step in putting your finances in order is to take an honest, sober look at what you're working with: What do you make? What do you owe? What sacrifices do you need to make to pay off your debt or reach some other financial goal? Unresolved emotions interfere with this process.

"When you're confused, angry, and scared, you're not really thinking rationally. Get to a point where you can refocus, sit down and really see your financial situation," he said. To combat the impulse to buy the treats and trinkets that can set us back, Keller urges that we learn to make money more tangible. Give more thought than a click or a card swipe to the purchases you make. Insist on only using cash if you have to. Do whatever it takes to make the consequences of spending more clear.

"When people have trouble with money, I tell them to go the old-fashioned route of putting cash in envelopes: One for groceries, another for utilities, another for mortgage or rent, another for fun," Keller said. "When you see the cash dwindling you'll think, 'Oh my gosh, I only have 25 dollars to last until Friday. How will I make this happen?'"

To avoid the emotional impulses that creep into our spending decisions, Robyn advises people to identify the wound that these impulses grow from. Ask yourself what void you are trying to fill.

"Be aware of decisions that build on our wound and ways to shift this. And then embrace the person you want to be," she said.

Finally, learn to set goals that bring real prosperity. Once you can see a solid financial future over the horizon, you won't be so tempted by frivolous purchases that sabotage it. You'll also be more likely to keep track of where your money is going.

Instead of chasing fantasies about becoming rich overnight, aim for making the most of what you have right now. See the value of the money you make, and save what you can for the future.

"What happens with life after debt? Once the student loans are paid up, what are you going to do with that extra 300 bucks a month?" Watson asks. "You're building that goal and desire. It's not that you want to be a millionaire. It's that you want to get better at this, and feel confident in yourself about your finances."

Do whatever it takes to make the consequences of spending more clear.



BRAM SABLE-SMITH

Bob Hall was recovering from yet another surgery in March 2014 when a volunteer walked into his hospital room. It had been a rocky recovery since his lung transplant three months earlier at the William S. Middleton Memorial Veterans Hospital in Madison, Wisconsin.

The volunteer wasn't there to check on his lungs or breathing. Instead, she asked Hall if he wanted to tell his life story.

Hall served in the Marine Corps during the Vietnam War. After the war, he had a political career as a Massachusetts legislator and then led professional associations for 30 years.

"I'm anything but a shy guy, and I'm always eager to share details about my life," Hall said, half-jokingly.

Hall, who was 67, spoke to the volunteer for over an hour about everything from his time as a D student in high school ("I tell people I graduated in the top 95 percent of my class") to his time in the military ("I thought the Marines were the toughest branch, and I wanted to stop the communists"). He finished with the health problems that finally landed him in the hospital, and brought him to the present day.

The interview was part of a program called My Life, My Story. Volunteer writers seek out vets at the hospital like Hall, and ask them all about their lives. Then they write up a thousand-word biography and go over it with the patient, who can add more details or correct any mistakes.

"Of course, being a writer I rewrote the whole thing," Hall confessed with a smile.

When the story is finished, it's attached to the patient's electronic record, where a doctor or nurse working anywhere in the Veterans Affairs medical system can read it.

Today more than 2,000 patients at the Madison VA have shared their life stories.

Project organizers say it could change the way providers interact with patients.

Personalizing Impersonal Medical Records

Clinicians can access a lot of medical data through a patient's electronic medical record, but there's nowhere to learn about a patient's personality, career, passions, or values, said Thor Ringler, who has managed the My Life, My Story program since 2013.

It brought me to tears.

Dr. Tamara Feingold-Link, a second-year medical resident, Brigham and Women's Hospital in Boston

"If you were to try to get a sense of someone's life from that record, it might take you days," Ringler said.

Thor Ringler has run the My Life, My Story program at the Madison VA since 2013. In that time, the program has written the life stories of more than 2,000 veterans at the hospital and placed them in their electronic medical records.

The idea for My Life, My Story came from Dr. Elliot Lee, a medical resident who was doing a training rotation at the Madison VA in 2012. The typical rotation for medical residents lasts only about a year, so Lee wanted to find a way to bring new, young doctors up to speed on the VA patients. He wanted a way for them to absorb not just their health histories, but more personal pieces of knowledge.

"It seemed to make sense that the patient might know a lot about themselves, and could help provide information to the new doctor," Lee said.

Lee and colleagues tried having patients fill out surveys, which were useful but still left the team wanting more. Next, they tried getting patients to write down their life stories themselves, but not many people really wanted to.

Finally, an epiphany: hire a writer to interview patients, and put it all down on paper.

It wasn't hard to find a good candidate: There was a poet in Madison, Thor Ringler, who had just finished his training as a family therapist. He

Mini-Biographies HELP CLINICIANS CONNECT WITH PATIENTS



was good at talking to people, and also skilled at condensing big thoughts into concise, meaningful sentences.

"I applied for it," Ringler said. "I was like, 'Well, of course! I was made for that!'"

Under Ringler's guidance, the project has developed a set of training materials to allow other VA hospitals to launch storytelling programs. About 40 VA hospitals around the country are currently interested, according to Ringler.

The program aims to address a perennial patient complaint.

In California, there's a program at the Fresno VA, and volunteers at the Los Angeles VA are scheduled for training this summer.

Ringler estimates hospitals would need to hire just one writer—working half or full time, depending on the hospital's size—to manage a similar storytelling program. That means the budget could be as low as \$23,000 a year.

The program aims to address a perennial patient complaint that Ringler



summed up this way: "I don't get to see anybody for very long, and nobody [at the hospital] knows who I am."

In addition to the interest from within the VA system, the idea has spread further, to hospitals like Brigham and Women's Hospital in Boston and Regions Hospital in St. Paul, Minn.

A 'Gift' to Doctors and Nurses

There is research that suggests when caregivers know their patients better, those patients have improved health outcomes.

One study found that doctors who scored higher on an empathy test have patients with better-controlled blood sugar. Another study found patients who gave their doctor a top rating for empathy recovered from a common cold nearly a full day sooner.

University of Colorado assistant professor Heather Coats studies the health impact of biographical storytelling. She notes that a 2008 study found striking improvement in care when radiologists were simply provided with a photo of the patients whose scans they were reading.

"They improved the accuracy of their radiology read," Coats said, "meaningless misspelled words, a better report than that's more detailed." Current research is investigating whether storytelling might have a similar effect on clinical outcomes.

And, Coats said, the benefits of the kind of storytelling happen-

85
PERCENT of clinicians thought reading the biographies of patients helped them improve patient care.

ing at the VA don't just accrue for the patients' benefit.

"I consider it a gift to the nurses and the doctors who are caring for the patient," she said.

A survey of clinicians conducted by the Madison VA backed that up: It showed 85 percent of clinicians thought reading the biographies of patients produced by Thor Ringler's team of writers was "a good use" of clinical time and also helped them improve patient care.

"It gives you a much better understanding about the entirety of their life and how to help them make a decision," said Dr. Jim Maloney, the surgeon who performed Bob Hall's lung transplant in 2013.

I thought the Marines were the toughest branch, and I wanted to stop the communists.

Bob Hall, Vietnam War veteran and retired legislator

Maloney says knowing more about a patient's life story makes it easier for the doctor to have difficult but necessary conversations with a patient—to learn, for example, how aggressively to respond if a complication occurs.

The stories generated by My Life, My Story let the entire transplant team connect quickly with patients and family members, and start conversations about sensitive issues or difficult choices about end-of-life care, he said.

Dr. Tamara Feingold-Link, a second-year medical resident at Brigham and Women's Hospital in Boston, first spotted a My Life, My Story biography when she was on rotation at a Boston-area VA.

When her attending physician asked Feingold-Link to run a meeting with a patient she barely knew—a man who was so sick he could hardly talk—his story became a powerful tool.

"It brought me to tears," she said. "When I met his family, I could connect with them immediately."

"It made his transfer to hospice much smoother for everyone involved," she said.

Now Feingold-Link has started a similar program at Brigham and Women's Hospital.

Beyond Medical Care
Hall has learned the stories can be meaningful to caregivers even when they're not working. During one of his stays at the Madison VA, a nursing aide stopped by for a visit.

"She came in one night and sat down on my bed just to talk to me for a while because she'd read my story," Hall said. "I found out later she wasn't on the clock."

It's been five years since Hall's lung transplant, and he's doing well. He even found a part-time job putting his writing skills to work as part of the My Life, My Story team.

In two years, Hall has written 208 capsule biographies of veterans.

Bram Sable-Smith is a freelance journalist. This story is part of a partnership that includes Wisconsin Public Radio, NPR, and Kaiser Health News, which first published this article.

(Top) Thor Ringler (R) interviews Ray Miller (L) in his hospital room in April 2019. Miller's daughter Barbara brought old photos to help facilitate the conversation, including an old press clipping from Miller's time in the National Guard.

(Top L) Thor Ringler has run the My Life, My Story program at the Madison VA since 2013. In that time, the program has written the life stories of more than 2,000 veterans at the hospital and placed them in their electronic medical records.

(Above R) Bob Hall holds a photograph of himself playing with children in a village in Vietnam during his time as a Marine. Hall was one of the earliest patients to be interviewed for the My Life, My Story program at the William S. Middleton Memorial Veterans Hospital in Madison, Wisconsin in 2014.

(Left) Dr. Jim Maloney says reading the biographies provided by My Life, My Story helps him develop better relationships with his patients.



Rather than focus on the bad food we may regret eating, it's better to focus on the good food we should try to eat more of.

A Focus on Not Eating Junk Food May Be Ruining Our Diet, Study Shows

An expansive study suggests it is better to focus on what you should eat, rather than what you should not

DEBORAH MITCHELL

Endless studies and experts tell us that eating a healthy diet is essential for overall health and disease prevention. They warn that consuming too much junk food is a big reason why we often fail to meet this goal.

Yet, a new study published in *Lancet* points out that “at the population level, a low intake of healthy foods is the most important factor, rather than the high intake of unhealthy [junk] foods.”

In other words, for 20 percent of people around the world who die every year, it's not that they ate too much junk food. It's that they didn't eat enough fruit, whole grains, nuts, and seeds, and they consumed too much sodium.

This was no small study. In fact, the Global

“**At the population level, a low intake of healthy foods is the most important factor, rather than the high intake of unhealthy [junk] foods.**”

Lancet study

Burden of Disease study spanned 27 years and gathered data from 195 countries from adults aged 25 years and older. It examined the relationship between dietary habits (specifically, a suboptimal diet) and preventable non-communicable diseases, including type 2 diabetes, cardiovascular diseases, and cancers.

What the Study Said About a Healthy Diet

The study shifts the focus of dietary recommendations from telling people to stop eating junk food and avoid unhealthy foods, to pointing out a few foods we should be including more of in our diets.

For example, a lack of whole grains was the No. 1 diet-related risk factor for deaths and morbidity in the United States and several other countries, including India, Germa-

ny, Turkey, and Russia. The problem is that many of the foods being sold as whole grains have actually been processed and stripped of their natural nutrients.

Low intake of nuts and seeds was the top risk factor in Mexico. This was followed by a low consumption of vegetables, whole grains, and fruit. Mexico also ranked very high in the consumption of sugary drinks. Two factors are believed to be behind this habit: a lack of clean drinking water and a cultural preference for homemade sugary beverages.

How to Stop Eating Junk Food

Ironically, the way to help people stop eating junk food or to stop eating sugar or too much salt may be to stop emphasizing all of the “don'ts.” Telling consumers to avoid unhealthy food isn't productive.

Instead, we would likely get better results if we focused on positive food choices. Once we include more of the foods in our diet that were noted in the study, they should automatically take the place of junk food and other unhealthy choices without specifically avoiding them.

Tips on Junk Food Versus Healthy Food

Choose fruits. Whole (organic when available) fresh fruits are preferred over fruit juices because of their high fiber content. The juicing process also causes most of the water-soluble vitamins to be lost.

If fresh fruit isn't available, dried fruit is an alternative. In fact, one piece of dried fruit contains nearly the same amount of nutrients as the fresh version. By weight, however, dried fruit contains approximately 3.5 times the fiber, minerals, and vitamins of fresh fruit.

Choose nuts and seeds. Both of these highly portable, snack-worthy foods are nutrient-dense and rich in a variety of vitamins and minerals, as well as fiber and protein. When combined with some dried fruit, this natural food combination is a great alternative to junk food.

Choose whole grains. One of the biggest challenges consumers face is choosing real whole grains. According to Andrew Reynolds, a postdoctoral research fellow at the University of Otago in New Zealand—who wasn't involved with the dietary study—we need to be aware that “whole grains are being included in ultra-processed products that may be finely milled down and have added sodium, added free sugars, and added saturated fats.”

These products shouldn't be confused with those that contain “intact, minimally processed whole grains.” If you want to know whether a product contains real whole grains, look for the “Whole Grain” stamp. This stamp is provided by the Whole Grains Council and available in 61 countries. The stamp certifies the degree of whole grains in a product.

The Bottom Line

It's time to take a different perspective on junk food and healthy diets. Focus on including more fruits, nuts and seeds, and whole grains and less on worrying about how to stop eating junk food.

Deborah Mitchell is a freelance health writer who 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

Yes, Counting Steps Might Make You Healthier

Researchers confirm the step-increasing power of a pedometer—with some goal setting

People who track their daily steps may be more active and less likely to develop health problems that lead to events like heart attacks or broken bones, a new study suggests.

Researchers examined data on 1,297 participants from clinical trials that randomly assigned half of the people to track steps with pedometers over 12 weeks while the rest of them did no tracking at all. When they joined the trial, people took about 7,500 steps a day and got 90 minutes a week of moderate to vigorous physical activity in at least 10-minute bouts.

Three to four years later, people who used pedometers were getting about 30 more minutes a week of moderate to vigorous physical activity, the study found. Pedometer users were also 44 percent less likely to experience a fracture and 66 percent less likely to have a serious cardiovascular event like a heart attack or stroke.

“Increasing your walking and maintaining this can reduce your risk of heart attacks, strokes, and fractures over the next few years,” said lead study author Tess Harris, a professor of primary care research at the St George's, University of London in the UK. “Pedometers can be helpful for patients

to use, as they give people a clear idea of how much they are doing (self-monitoring) and can be used to set realistic goals for increasing their walking gradually,” Harris said by email. “There is no one appropriate step-count for everyone, it is important for individuals to measure their own baseline step-count and then to have a plan to gradually increase both how often they walk and how fast they walk in a safe way for them.”

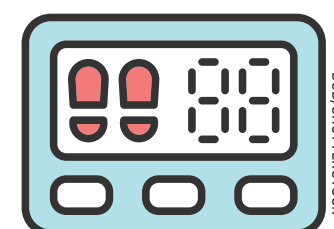
People ranged in age from 45 to 75 years old when they joined the pedometer trials, and they were typically overweight or obese. Most of them were nonsmokers in good health without any history of cardiovascular disease, diabetes, or depression.

While people who got pedometers appeared less prone to diabetes or depression by the end of the study, the difference between this group and the participants who didn't track steps was too small to rule out the possibility that it was due to chance.

Trial participants did have some help setting realistic walking goals, and also received coaching from nurses and were encouraged to keep step diaries.

This extra support may be a key ingredient for successful health outcomes from

Pedometer users were 66 percent less likely to have a serious cardiovascular event.



tracking steps, said Dr. Mitesh Patel, Director of the Penn Medicine Nudge Unit at the University of Pennsylvania in Philadelphia.

“Tracking your daily activity with a pedometer, wearable, or smartphone is an important part of any physical activity program,” Patel said by email. “However, it should be combined with other behavior change strategies such as goal-setting, coaching, or social interventions to increase sustainability.”

One limitation of the study is that researchers lacked four years of data for some participants, the study team notes in *Plos Medicine*. Most of the participants were also white and female, and its possible results would be different for other populations.

Even so, there's little harm in giving a pedometer a try, said Dr. David Geier, an orthopedic surgeon and sports medicine specialist in Charleston, South Carolina.

“Don't obsess about the number of steps, but try to go for a walk every day,” Geier, who wasn't involved in the study, said by email. “Hopefully it will become a habit and encourage you to become active in other ways in your life.”

By Lisa Rapaport
From Reuters

Arterial Hypertension and Metabolic Syndrome Risk Are Associated With the Living Environment

MAT LECOMPTÉ

We know that environment can play a significant role in how healthy we are, but a new study suggests that it can specifically impact the risk of arterial hypertension and metabolic syndrome.

The research, soon to be published in the *Journal of Public Health*, shows that air pollution and living in apartment buildings may be associated with an increased risk for health conditions such as type 2 diabetes, heart disease, and stroke.

For the study, long-term exposure to ambient air pollution and distance from green spaces and major roads to residential housing were investigated. This was compared with the development of hypertension and some components of metabolic syndrome. The study was conducted among people living in private houses or multi-story housing in Kaunas City, the second largest city in Lithuania with a population of 280,000.

The results showed that air pollution levels above the median were associated with a higher risk of health problems. Specifically, traffic-related exposure was found to be associated with hypertension, reduced high-density lipoprotein (LDL) cholesterol,



and a high triglyceride level. A surprising outcome of the study showed that the negative impact of traffic air pollutants was observed only in the participants who lived in apartment buildings.

It is thought that since there tends to be more traffic near apartment buildings, this may be the cause of a higher risk of health problems. It is also hypothesized that in apartment-style living, its configurations, and social interactions could have an impact on cardiovascular disease risk.

▲
Air pollution and living in apartment buildings may be associated with an increased risk for health conditions such as type 2 diabetes, heart disease, and stroke.

The causes of these disorders are complex, but research like this helps to further show that there can be environmental factors, including traffic air pollution, traffic noise, residential housing, and neighborhood quality. Genetic factors, lifestyle, and diet are also known risk factors for these types of diseases.

Mat Lecompte is a freelance health and wellness journalist. This article was originally published on BelMarraHealth.com

FOOD IS MEDICINE

Simple Ways to Unclog Your Arteries—Naturally

SAYER JI

We all want to live a long life, and eating a few simple foods has been scientifically proven to prevent—and in some cases reverse—the top cause of death in the modern world.

At present, atherosclerosis (the progressive narrowing and clogging up of the arteries) is the driving process behind cardiovascular mortality, the top cause of death on this planet at approximately 18 million deaths annually. A complex process, involving autoimmunity, infection, dietary incompatibilities, and other known and unknown factors, it is—despite conventional medical opinion—entirely preventable, and in some cases reversible.

Here is some of the peer-reviewed, published research proving that fact:

- **B Vitamins:** Yes, something as simple as adding a source of B-complex to your regimen can prevent the juggernaut of heart disease from taking your life prematurely. A double-blind, randomized study, published in 2005, in the *Journal of Atherosclerosis* found that a simple intervention using 2.5 mg folic acid, 25 mg Vitamin B6, and 0.5mg Vitamin B12 for 1 year, resulted in significant reductions in arterial thickness (as measured by intima-media thickness). Even niacin or folic acid alone has been shown to have this effect on patients. [Note: Always opt for natural sources of the B-group vitamins, including probiotic supplementation, which produce the entire complement for you, or a whole food extract, versus synthetic or semi-synthetic vitamins which, sadly, predominate on the market today].

Our daily decisions, especially regarding what we decide we are going to eat or do not eat, are first and foremost.

- **Garlic:** As we have documented extensively previously, garlic can save your life. It has been found to regress plaque buildup in the arteries, among many other potentially life-saving health benefits.
- **Pomegranate:** This super healing fruit has been found to regress plaque buildup in the arteries and provide dozens of validated health benefits, including replacing the function of the mammalian ovary.
- **Fermented Cabbage:** Kimchi, a Korean recipe, which includes fermented cabbage, hot pepper, various other ingredients, and sometimes fermented fish, appears to stall the atherosclerotic process in the animal model. Additionally, strains of good bacteria in kimchi have been found capable of degrading toxic chemicals that can add additional bodily harm.
- **L-Arginine:** This amino acid is capable of preventing arterial thickening—up to 24 percent reduction!—in the animal model. We have done an extensive literature review on arginine supplementation and have found that in over 30 studies demonstrating this fact addition to 150 known health benefits, it is capable of addressing the underlying dysfunction associated with cardiovascular disease: endothelial dysfunction, with no less than 20 studies proving this fact.

• **Turmeric (curcumin):** The primary polyphenol in the Indian spice turmeric known as curcumin has been found to be an excellent cardioprotective, with over 30 studies demonstrating this fact. One study found that curcumin prevented damage to the arteries associated with blockage (neointima formation). We've discussed turmeric's cardiovascular health benefits in

greater depth in an article comparing it to aspirin online.

- **Sesame Seed:** Probably one of the most underappreciated superfoods on the planet, sesame seed, which we have shown is as effective as Tylenol for arthritic pain, may be an excellent cardioprotective substance, ideally suited for preventing the progression of atherosclerosis. One animal study found it was capable of preventing atherosclerosis lesion formation. Another human study found that eating sesame seed paste can reduce blood markers of cardiovascular disease.

This is a small sample of evidence-based natural interventions for cardiovascular disease prevention and/or regression. We have a much larger set of studies on over 200 natural substances capable of reducing the risk of heart attack and associated cardiovascular diseases.

Remember, heart disease is not a natural process, that we must accept as inevitable based on family history of an outdated gene-based model of human disease risk. Our daily decisions, especially regarding what we decide we are going to eat or do not eat, are first and foremost. We can use food as medicine, sloughing off the pharmaceutical industry meme that we need statins to stave off the ‘inevitable.’ Take back control of your health with nutrition, and realize that food is the only medicine that will both nourish us and heal our bodies in a way that will produce lasting health.

Sayer Ji is the founder of GreenMedInfo.com, a reviewer at the International Journal of Human Nutrition and Functional Medicine, co-founder and CEO of Systeme Biomed, vice chairman of the board of the National Health Federation, and steering committee member of the Global Non-GMO Foundation.

JULYON/SHUTTERSTOCK

Unexpected Evidence of a Brain Microbiome



The outdated notion that bacteria are harmful invaders in the body was challenged further when researchers found bacteria in the brain

KELLY BROGAN

By now, almost everyone has heard of the human microbiome—the collection of viruses, bacteria, and fungi that play a pivotal role in our health and cognitive functioning. Also called the microbiota, we’ve long assumed that the microbiome consists of microbes that reside along our gastrointestinal tract—and more recently, on our skin. That’s logical enough; microbes live on our interfaces with the outside world. Conversely, there are certain areas in the human body that are assumed to be sterile, aka free of microbes, like the eye and the womb. However, advances in

analytical techniques enabled researchers to recently identify the placental microbiome and eye microbiome that are present in healthy people. That’s pretty cool, but there definitely couldn’t be microbes in our brains, the most protected area of our bodies, right?

A head-turning poster at the November 2018 Society for Neuroscience scientific conference called into question the assumption of the brain as a sterile, bacteria-free zone. A team of researchers from The University of Alabama–Birmingham (UAB), led by Professor Rosalinda Roberts, showed high-resolution microscope images of mouse and human brains that depicted bacteria happily residing in astrocytes, star-shaped brain

cells that interact with and support neurons.

Like most people in the field, the UAB researchers were not looking for bacteria in the brain; this finding happened serendipitously. An undergraduate researcher named Courtney Walker was comparing microscope images of the brains of healthy people and those with schizophrenia to see if there were structural differences underlying the pathology, and she kept seeing the rod-like structures in the brain samples. Puzzled, Professor Roberts consulted some colleagues and learned that these structures were bacteria. She realized that bacteria had been present in every brain that the lab had examined—34 brains in total.

To determine if the bacteria

were a result of contamination between the time of death and brain sample preparation, Prof. Roberts and the team studied mouse brains immediately after death. To their surprise, they found bacteria in the mouse brains as well. Perhaps there was some contamination in the preparation of brain tissue slices for microscopy? To address that question, they raised mice in germ-free environments—with no bacterial exposure (at least theoretically)—and prepared the brain samples in the same way. They found no bacteria; none in the mouse guts or brains. This finding

implies that the bacteria present in the brain comes from the environment or from within the body.

Given this result, the Roberts team dove deeper and used RNA sequencing to identify which types of bacteria were in human and mouse brains. Intriguingly, most of the bacteria were identified as Firmicutes, Proteobacteria, and Bacteroidetes—3 phyla commonly found in the gut. Perhaps these bacteria traveled from the gut to the brain, climbing up nerves or traversing blood vessels?

This preliminary finding has sparked many open questions. Are these commensal or pathological species? Does the quantity and composition of the brain microbiome change over time? Where do the bacteria come from? These exciting findings are reminiscent of the surprisingly recent discovery of the brain’s immune system that underpins the emerging field of psychoneuroimmunology.

The interdependence of all life is indeed being revealed in the hallowed halls of research science. It is becoming more and more inaccurate to vilify microorganisms as the evil “other” that invade and infect us. Through discoveries like this, we are being initiated to a new worldview that asks us to live in harmony with the natural world, to perceive our interdependence, and to end the wars we are fighting in hopes of finally one day beating those invisible assailants into submission ... as they are, in fact, inextricably a part of us.

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