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Take Control of Your Health

25 Health Tips for 25 Years

Analysis by Dr. Joseph Mercola Fact Checked | August 10, 2022

STORY AT-A-GLANCE

- To commemorate 25 years of offering the most up-to-date health information available, I summarize 25 of my favorite health tips
- To optimize your metabolic flexibility, consider implementing time-restricted eating and strength training. Blood flow restriction (BFR) training is an excellent method that can provide maximum benefits without the risk of injury from using heavy weights. Standing and walking as much as possible are also important
- Dietary tips that can help optimize your health include eliminating seed oils, eating enough animal protein, proper hydration and incorporating supplements like molecular hydrogen, collagen, enzymes, glycine, B vitamins, quercetin, choline and CBD oil as needed
- Lifestyle factors with beneficial impacts on health include sun exposure, sauna therapy and getting sufficient amounts of sleep
- Factors with detrimental impacts on health that need to be addressed include electromagnetic field (EMF) exposure, LED lighting, toxic emissions from nonstick cookware, high blood pressure and high iron

To commemorate 25 years of offering the most up-to-date health information available, here's a summary list of 25 of my favorite health tips.

No. 1 — Time-Restricted Eating (TRE) for Metabolic Flexibility

Over 90% of people eat more than 12 hours a day, which is a recipe for metabolic disaster. Eating all your meals within a six- to eight-hour window each day is one of the most powerfully effective ways I've found to normalize your insulin/leptin sensitivity, which is a root cause of most chronic diseases.

A number of different intermittent fasting regimes have sprung up — some of which are more extreme than others — but all are based on the premise that you need periods of fasting, for 16 to 22 hours a day. As noted in the paper "A Time to Fast," published in the November 2018 issue of Science:[1]

> *"Adjustment of meal size and frequency have emerged as powerful tools to ameliorate and postpone the onset of disease and delay aging, whereas periods of fasting, with or without energy intake, can have profound health benefits.*
>
> *The underlying physiological processes involve periodic shifts of metabolic fuel sources, promotion of repair mechanisms, and the optimization of energy utilization for cellular and organismal health … In general, both prolonged reduction in daily caloric intake and periodic fasting cycles have the power to delay the onset of disease and increase longevity."*

I go into far more details in "**The Science of Time-Restricted Eating**," posted July 4, 2022.

No. 2 — Eliminate Seed Oils From Your Diet

One of the simplest yet perhaps most impactful dietary changes you can make is to eliminate seed oils from your diet. Omega-6 linoleic acid (LA) is, I believe, a primary contributor to nearly all chronic diseases, because when consumed in excessive amounts, LA acts as a metabolic poison that radically limits mitochondrial function and your ability to produce cellular energy.

Polyunsaturated fats such as LA are highly susceptible to oxidation, and as the fat oxidizes, it breaks down into harmful subcomponents such as advanced lipid oxidation

end products (ALES) and oxidized LA metabolites (OXLAMs). These ALES and OXLAMs are what cause most of the damage.

While excess sugar is certainly bad for your health, it doesn't cause a fraction of the oxidative damage that LA does. Industrial seed oils or vegetable oils are a primary source of LA, but even food sources hailed for their health benefits contain it, such as olive oil and conventionally raised chicken and pork, both of which are fed LA-rich grains. To avoid these harmful oils:

- Don't cook with them
- Avoid store-bought processed foods and condiments
- Avoid fast food and regular restaurant food
- Avoid chicken, pork and olive oil and limit seeds and nuts as all, with the exception of macadamia nuts, are loaded with LA
- Don't eat fake meat products like Impossible Burger — all of the fats in these meat substitutes come from seed oils

For cooking, use the oils in green in the chart below. The best way to ensure your LA intake is within the safe range is to use a nutritional calculator such as **Cronometer**. Once you've entered the food for the day, go to the "Lipid" section on the lower left side of the Cronometer app. To find out how much LA is in your diet for that day, just note how many grams of omega-6 is present. About 90% of the omega-6 you eat is LA.

Cooking Oils	% Linoleic Acid (LA) Average Value (Range in Parentheses)
Safflower	70%
Grape seed	70%
Sunflower	68%
Corn	54%
Cottonseed	52%
Soybean	51%
Rice bran	33%
Peanut	32%
Canola	19%
Olive oil	10% (3% - 27%)
Avocado	10%
Lard	10%
Palm oil	10%
Tallow (CAFO)	3%
Butter (CAFO)	2%
Coconut oil	2%
Tallow (Grass Fed)	1%
Butter (Grass Fed)	1%

Seeds/Nuts	% Linoleic Acid
Poppy seed	62%
Hemp	57%
Wheat germ	55%
Walnut	53%
Pecan	50%
Pumpkin	45%
Brazil nuts	43%
Sesame	41%
Peanut	32%
Pine Nuts	33%
Chia	16%
Almond	16%
Flaxseed	14%
Pistachio	13%
Hazelnuts	12%
Cashew	8%
Macadamia	2%

No. 3 — Blood Flow Restriction (BFR) Training

This section is not that long, as I am running a full 30-page BFR article August 12, 2022, so I will just provide the highlights here. Contrary to popular belief, resistance training may actually be more important than aerobic exercise, especially for the elderly, as maintaining strong muscles plays an important role in quality of life, longevity and neurological health.[2,3]

Building and maintaining muscle will also go a long way toward optimizing your metabolism and warding off insulin resistance,[4] a primary driver of virtually all chronic and degenerative diseases, including Type 2 diabetes and heart disease.

Kaatsu or blood flow restriction (BFR) training is probably the most effective type of resistance training out there, and it's particularly beneficial for the elderly and athletes recovering from an injury. You can find in-depth details about how to do BFR in my free **Exercise Guide**.

In brief, BFR involves performing strength training exercises while restricting venous blood flow return to the heart (but not arterial flow) to the extremity being worked. By forcing blood to remain inside your muscle while it is exercising with light weights, you stimulate metabolic changes in your muscle that results in great improvements in strength and size with virtually no risk of injury.

You can use just 20% of the weight you could maximally lift, while still reaping maximum benefits. As a result, you circumvent the dangers associated with heavy weights. Blood flow restriction training can stimulate muscle growth and strength in about half the time, using about one-fifth of the weight, compared to standard weight training which makes it widely available to seniors.

For a limited time, you can get 10% off the KAATSU band by using this link: **www.kaatsu.com/go/NVIC**

No. 4 — Sun Exposure as a Source of Vitamins A, D and Melatonin

Sunlight provides vital wavelengths for your health, like ultraviolet B (UVB) rays that trigger the production of vitamin D in your skin, and near-infrared light that catalyzes melatonin production in your mitochondria. Sun exposure also activates vitamin A (retinol), forming active metabolites called retinoids.

Beta carotene, which many mistakenly believe is vitamin A, is actually a precursor to vitamin A. Vitamin A is just as important as vitamin D for health, especially immune health, but it has to be the active form.

Sunlight also increases nitric oxide and optimizes serotonin production for improved mental health. Vitamin D has gained loads of attention with the emergence of COVID-19, as numerous studies keep finding compelling links between vitamin D status and risk of infection, infection severity and mortality. You can learn more about this in my special report, "**Vitamin D in the Prevention of COVID-19**."

While oral vitamin D supplements are inexpensive and readily available, sun exposure is your best source. It's free, it doesn't require you to pay attention to other nutrients that need to be taken in conjunction with oral vitamin D, such as vitamin K2 and magnesium, and, as mentioned, it provides other health benefits over and beyond vitamin D production.

Ideally, get one hour of sun exposure every day around solar noon (between 11.30 a.m. and 2.30 p.m. if you are in daylight saving time), while wearing as little clothing as possible and no sunscreen. It is also important to build up to one hour slowly if you haven't had much sun exposure. You should never get burned, but please understand that it is excess LA in your diet that is the largest contributor to sunburn and skin cancer.

No. 5 — Most of Us Need to Donate Our Blood

Another crucially important health strategy is to make sure you don't have high iron levels. Most men and postmenopausal women have high iron, largely thanks to so many processed foods being "fortified" with dangerous forms of iron like iron fillings, and the fact that your body has no pathway eliminate iron other than blood loss.

Stored iron is incredibly damaging to all of your tissues as it promotes oxidative stress that can damage your mitochondrial DNA, cell membranes and electron transport proteins. If left untreated, it can damage your organs and contribute to cancer, heart disease, diabetes, neurodegenerative diseases and many other disorders.

It's also one of the most common causes of fatigue because of how it impairs your mitochondrial production of energy. Iron has a terminal destination in the mitochondria

from where it must be recycled. However, for that to occur, you must have enough copper, and most people don't. As a result, the iron gets "stuck" and cannot be recycled.

So, a low ferritin level is not necessarily a sign that you need iron. You more than likely already have too much stored in your tissues that are simply unavailable due to low availability of copper, which is typically the result of retinol deficiency.

The average person accumulates about 1 milligram of iron a day, and if it's not being recycled due to a copper deficiency, you end up in a vicious cycle. You may be told you low iron and need iron supplementation, but the problem is really a copper deficiency. So, you keep loading in iron, and your health suffers as a result.

The serum ferritin test measures stored iron that has seeped out into your blood, but it doesn't indicate tissue iron stores. I strongly recommend all adults to get this test done on an annual basis. Ideally, your serum ferritin should be between 20 and 40 ng/mL. If your ferritin level is above 80 ng/mL, the solution is to donate your blood. If it's over 200 ng/mL, a more aggressive phlebotomy schedule is highly recommended.

If donating a full pint (half a liter, 500 ml or about 16 ounces) of blood three to four times a year is problematic, you can remove blood in smaller amounts once a month on the schedule listed below. If you have congestive heart failure or severe COPD, you should discuss this with your doctor, but otherwise this is a fairly appropriate recommendation for most.

I personally remove 60 cc or 2 ounces of blood once a week, which is about 7 pints per year. This is a large amount but because it is done slowly it is far better tolerated.

Men	150 ml
Postmenopausal Women	100 ml
Premenopausal Women	50 ml

No. 6 — Eat Enough Animal Protein

To build muscle, it's really important to get enough protein in your diet, ideally animal protein. There are 20 amino acids and nine of them are essential, which means you have to get them from your diet, as your body cannot make them from other substrates.

Here is a list of essential nutrients that are essentially unavailable in plant foods. If, for whatever reason you chose to eat a primarily plant-based diet, you will need to figure out some way to get these absolutely crucial nutrients into your diet. This is why I believe including animal protein is a wise strategy, as it will virtually assure you receive these nutrients without having to take supplements.

Carnitine	Carnosine
Choline	Creatine
Collagen	Retinol
Vitamin B12	CoQ10
EPA DHA	Taurine

For most normal-weight adults, 30 grams of protein per meal is really the minimum you need to stimulate muscle protein synthesis. If you have a robust strength training program, you may need to go far higher. Older adults typically need 30 to 50 grams per meal, children around 5 to 10 grams, and young adults about 20 grams per meal.

For reference, there's approximately 7 grams of protein in each ounce of steak, so a 5-ounce steak would give you 35 grams of high-quality protein. To make sure you're getting enough protein in your meals, consider using a free nutritional tracker like **Cronometer**.

For more details please review "**Building Muscle With Exercise and Reassessing Protein Intake**," posted July 24, 2022.

No. 7 — Sauna Therapy

Health benefits of sauna therapy include detoxification, improved cardiovascular fitness, reduced all-cause mortality, lower blood pressure, reduced dementia risk, improved mental health, strengthened immune function, improved athletic endurance, reduced inflammation, stem cell activation, improved insulin sensitivity and a reduction in stress hormones.

All of these benefits occur in a dose-dependent manner, so the more frequent your sauna use, the more robust your benefits will be. And, combining sauna with other strategies, such as cold-water immersion and/or exercise can optimize these kinds of benefits even further.

When it comes to detoxification, in order to be truly effective, you first need to mobilize the toxins, many of which are stored in your fat cells. Fasting is a powerful strategy that can help with this, as it mobilizes fat-soluble toxins.

Next, you need to make sure your detox pathways are working properly, and that the toxins are being properly excreted. To avoid reabsorption, it's important to take binding agents when fasting — and to sweat out the toxins. Using a near infrared sauna is an ideal way to coax out toxins stored in your body.

"The Stunning Health Benefits of Sauna Therapy" is one of the best articles I have posted this year. I dive deep into all the benefits of sauna and more importantly, how you can create a world class near-infrared sauna (near-infrared, not far-infrared) in your home for about $1,000.

This is important as a far-IR sauna will not produce melatonin in your mitochondria. Only near-IR does that. I also detail how you can easily convert your far-IR sauna to a superior near-IR sauna. It is well worth a subscription to our Substack.

No. 8 — Molecular Hydrogen

Molecular hydrogen (H_2) is a gas with very unique and selective antioxidant effects that specifically target the most harmful free radicals. This means it activates your body's intrinsic ability to generate antioxidants if and only if there is excessive oxidative stress which is perfect as high dose antioxidants can be indiscriminate and suppress beneficial free radicals.

As a result, you see improvements in superoxide dismutase, catalase and glutathione levels, for example. It can also help prevent an excess of free radicals from being produced in the first place, which is a powerful prevention mechanism.

To learn more about the details of how molecular hydrogen works, see my **interview with molecular hydrogen expert Tyler W. LeBaron** that I posted in January. According to LeBaron, more than 1,000 peer-reviewed scientific publications have collectively demonstrated that H_2 has therapeutic potential in over 170 different human and animal disease models.

In fact, hydrogen is shown to benefit virtually every organ of the human body, and the reason for this is because hydrogen actually targets and mitigates the root causes of inflammation and oxidation.

No. 9 — Optimize Your Sleep and Get Enough of It

Getting enough high-quality sleep is one of the most important but frequently neglected health strategies for most people. They assume they are beyond the biology rules and can cheat their health by going to bed late and sleeping six hours or less, while still sincerely believing they will be healthy.

Part of the reason why this is absurd is that each and every one of your organs has its own biological clock, which helps explain why sleep is so crucial for good health. In your brain is a "master clock" that synchronizes these clocks and your bodily functions to match the 24-hour light and dark cycle.

When you upset your circadian rhythm by insufficient sleep, the results can have far-reaching consequences, affecting everything from mood, creativity and brain

detoxification to DNA expression, chronic disease risk — including dementia — and longevity. Helpful tips to optimize your sleep include:

Sleep in complete darkness, or as close to it as possible, to avoid lowering melatonin production, which can interfere with your sleep.
Keep the temperature in your bedroom no higher than 70 degrees Fahrenheit.
Eliminate electromagnetic fields (EMFs) in your bedroom.
Keep all electronic devices at least 3 feet from your bed.
Adopt a neutral sleeping position by propping your pillow under your neck, not your head, to maintain a proper spinal curve.
Reserve your bed for sleeping and don't keep a TV in your bedroom.
Consider separate bedrooms if sharing your bed with a partner impairs your sleep. Pets may also need to be kept in another room if they disturb your sleep.

As a general rule, most adults need right around eight hours of sleep each night, and perhaps a bit more when you're ill, pregnant or recovering from high amounts of exercise. For more details see "**Top 33 Tips to Optimize Your Sleep Routine**," posted February 5, 2022.

No. 10 — Minimize EMF Exposure

EMF exposures — which include AC electric fields from house wiring and corded appliances, AC magnetic fields from power lines and wiring errors, radio frequencies from smart meters, cellphones and Wi-Fi, and dirty electricity (transient voltage spikes as a result of switching mode power supplies) — have been linked to a wide array of health effects,[5] including:

Excess oxidative stress	Opening your blood-brain barrier, allowing toxins to enter your brain
DNA damage	Impaired proton flow and ATP production
Altered cellular function due to excessive charge	Altered microbiome

Cancer, neurological dysfunction,[6] anxiety, depression, autism and Alzheimer's are all potential results of excessive EMF exposure, and all of these hazards are likely to exponentially increase with the implementation of 5G.

Ways to Reduce Your EMF Exposure

Connect your desktop computer to the internet via a wired connection and be sure to put your desktop in airplane mode. Also avoid wireless keyboards, trackballs, mice, game systems, printers and house phones. Opt for the wired versions.
If you must use Wi-Fi, shut it off when not in use, especially at night when you are sleeping. Ideally it is best to work toward hardwiring your house so you can turn off the Wi-Fi at all times. If you have a notebook without any Ethernet ports it is easy to purchase a USB Ethernet adapter that will allow you to connect to the internet without a wireless connection.
Shut off the electricity to your bedroom at night. This typically works to reduce electrical fields from the wires in your wall unless there is an adjoining room next to your bedroom. If that is the case you will need to use a meter to determine if you also need to turn off power in the adjacent room.
Use a battery-powered clock, ideally one without any light. I use a talking clock that I merely press a button to determine the time and never see any light at night.

If you still use a microwave oven, consider replacing it with a steam convection oven, which will heat your food as quickly and far more safely. Next to induction stovetop burners, microwave ovens are likely the largest EMF polluters in your home.

Avoid using "smart" appliances and thermostats that depend on wireless signaling. This would include all new "smart" TVs. They are called smart because they emit a Wi-Fi signal and, unlike your computer, you are unable to shut the Wi-Fi signal off. Consider using a large computer monitor as your TV, as they don't emit Wi-Fi.

Refuse smart meters as long as you can or add a shield to an existing smart meter, some of which have been shown to reduce radiation by 98 to 99%.

Considering moving your baby's bed into your room instead of using a baby monitor, or use a hard-wired monitor. In any case avoid any baby monitor that is wireless. There are some wired options available.

Replace CFL bulbs with incandescent bulbs. Ideally remove all fluorescent lights from your house. Not only do they emit unhealthy light, but more importantly they will actually transfer current to your body just being close to the bulbs.

Avoid carrying your cellphone on your body unless it is in airplane mode and never sleep with it in your bedroom unless it is in airplane mode (and especially not under your pillow). Even in airplane mode it can emit signals, which is why I put my phone in a Faraday bag.

When using your cellphone, use the speaker phone and hold the phone at least 3 feet away from you. Seek to radically decrease your time on the cellphone. I probably am down to below 30 minutes a month on my cell, mostly when traveling. Instead use VoIP software phones that you can use while connected to the internet via a wired connection.

For more details see "**How to Reduce Your EMF Exposure**," posted February 17, 2022.

No. 11 — Ditch Nonstick Cookware and Other Air Polluting Items

The average American spends 90% of their day indoors, where air pollution levels can be up to five times higher than outside.[7] Two primary sources of indoor air pollution are a) materials used to construct the building itself and everything in it, including your furniture, and b) chemical products you bring into and use inside your home.

One oft-ignored source of daily toxic exposure is the use of nonstick cookware, which release toxic per- and polyfluoroalkyl (PFAS) substances when heated. A whopping 98% of Americans have PFAS in their blood,[8] attesting to the pervasiveness of these chemicals.

PFAS have been linked to a number of serious conditions, including thyroid disease, organ damage, cancer and infertility.[9] Healthier options include ceramic and enameled cast iron cookware, both of which are durable, easy to clean and completely inert, which means they won't release any harmful chemicals into your home.

How to Avoid PFAS Chemicals

Suggestions that will help you avoid these dangerous chemicals include avoiding:

Items that have been pretreated with stain-repellants, and opt out of such treatments when buying new furniture and carpets.

Water- and/or stain-repellant clothing — One tipoff is when an item made with artificial fibers is described as "breathable." These are typically treated with polytetrafluoroethylene, a synthetic fluoropolymer.

Items treated with flame retardant chemicals — This includes a wide variety of baby items, padded furniture, mattresses and pillows. Instead, opt for naturally less flammable materials such as leather, wool and cotton.

Fast food and carry out foods — The wrappers are typically treated with PFCs.

Microwave popcorn — PFCs not only may present in the inner coating of the bag, but they also may migrate to the oil from the packaging during heating. Instead, use "old-fashioned" stovetop popcorn.

Nonstick cookware and other treated kitchen utensils — Healthier options include ceramic and enameled cast iron cookware, both of which are durable, easy to clean and completely inert, which means they won't release any harmful chemicals into your home.

A newer type of nonstick cookware called Duralon uses a nonfluoridated nylon polymer for its nonstick coating. While this appears to be safe, your safest bet is still ceramic and enameled cast iron.

While some recommend using aluminum, stainless steel and copper cookware, I don't for the following reasons: Aluminum is a strongly suspected causal factor in Alzheimer's disease, and stainless steel has alloys containing nickel, chromium, molybdenum and carbon.

For those with nickel allergies, this may be a particularly important consideration. Copper cookware is also not recommended because most copper pans come lined with other metals, creating the same concerns noted above. (Copper cookware must be lined due to the possibility of copper poisoning.)

For more details see "**91 Foods Tested for Toxins; This Favorite Failed Miserably**" which I posted April 17, 2022.

No. 12 — Address High Blood Pressure

About 116 million people in the U.S. alone (nearly half of all adults) have high blood pressure, and it's uncontrolled in 46% of them.

In 2017, the American Heart Association (AHA) and the American College of Cardiology, along with nine other health organizations, changed the cutoff used to diagnose high

blood pressure from 140/90 mm Hg to 130/80 mm Hg.[10] Normal blood pressure is now below 120/80 mm Hg.

This slight shift increased the number of people diagnosed to include many who had previously been considered healthy. Usually, there are no warning signs or symptoms of high blood pressure. The only way to know for certain is to have your pressure measured.

Uncontrolled high blood pressure is the leading cause of heart disease and stroke and raises your risk of kidney and heart failure.[11] High blood pressure increases the workload on your heart muscle, which may result in heart failure and damage the arteries supplying the muscle with oxygen, leading to a potential heart attack.

High blood pressure may also damage small arteries, reducing the amount of oxygen delivered to your organs such as your kidneys and eyes. Over time, this may result in kidney failure[12] and vision loss.[13] Strategies to normalize your blood pressure include:

Avoiding processed foods (due to them being high in sugar, fructose, grains, seed oils and linoleic acid (LA))
Getting regular exercise
Optimizing your potassium-to-sodium ratio
Intermittent fasting or TRE
Reducing stress
Eating foods known to reduce high blood pressure, such as arugula, flaxseeds, beets, celery, olive oil and cooked tomatoes
Quitting smoking

For more details, see "Do You Know Your Blood Pressure? Your Brain Depends on It," posted June 4, 2022.

No. 13 — Stop Tech From Surveilling You by Protecting Your Privacy

In recent years, the privacy hazards and dangers to democracy and freedom of thought and speech posed by Google and Facebook have become glaringly obvious. The amount of information gleaned about you through these two platforms alone is far beyond what most people can imagine.

Google and Facebook are also two primary platforms through which the war on humanity is being fought, using censorship, propaganda and AI-driven social engineering. Most everyone has by now experienced these devastating powers first hand.

To safeguard your privacy and take a stand for freedom, boycott Google and Facebook and opt for alternatives that offer privacy and/or free speech protections. For example: To take back some of your online privacy, for yourself as well as your children:

- Get rid of Gmail. If you have a Gmail account, try a non-Google email service instead such as ProtonMail, an encrypted email service based in Switzerland.
- Uninstall Google Chrome and use Brave browser instead, available for all computers and mobile devices. It blocks ads and protects your privacy.
- Switch search engines. Try Brave search engine instead, which you can access on the Brave browser and will not compromise your privacy and surveil you.
- Avoid Android. Google phones and phones that use Android track virtually everything you do and do not protect your privacy. It's possible to de-Google your cellphone by getting an Android phone that doesn't have a Google operating system, but you'll need to find a skilled IT person who can reformat your cellphone's hard drive.

Avoid Google Home devices. If you have Google Home smart speakers or the Google Assistant smartphone app, there's a chance people are listening to your requests, and even may be listening when you wouldn't expect.

Consider using a proxy or VPN (Virtual Private Network). This service creates a buffer between you and the internet, "fooling many of the surveillance companies into thinking you're not really you."

For more details read "Robert Epstein Warns Against Big Tech Manipulation," posted May 7, 2022.

No. 14 — Melatonin

Melatonin is one of the most important antioxidant molecules and certainly the most ancient, as it has been part of biological life for over 3 billion years. In the human body, melatonin not only has independent direct antioxidant effects, but it also stimulates the synthesis of glutathione and other important endogenous antioxidants like superoxide dismutase and catalase.

There are two sources of melatonin in your body: The melatonin produced in your pineal gland, which is released into your blood, and subcellular melatonin produced inside your mitochondria, which produces 95% of all the melatonin in your body.

Mitochondrial melatonin production is one of the reasons why regular sun exposure is so crucial. Importantly, the melatonin that your mitochondria produces does not escape your mitochondria. It doesn't go into your blood. So, you're not going to directly increase your blood or serum level of melatonin by sun exposure. But, bright sun exposure around solar noon will indirectly help your pineal gland to produce melatonin during the night.

It is important to understand that your blood level of melatonin is indicative of the melatonin produced in your pineal gland, and/or oral supplementation. Conversely, the

melatonin produced by your pineal gland can also enter into the mitochondria, but that amount is exceeding small, considering the trillions of mitochondria, which is why it is so important to get regular sun exposure.

Considering melatonin's function within the mitochondria, and the fact that mitochondrial dysfunction is a hallmark of most chronic disease, it makes sense that melatonin would be helpful against a number of different diseases, including the two most common — heart disease and cancer.

In a recent interview with melatonin expert Dr. Russel Reiter, featured in "**What You Need to Know About Melatonin**," we reviewed the ins and out of using melatonin for these and other conditions. Importantly, melatonin is a really important remedy to have in your first aid kit, for use during the first signs of a heart attack, as it can help ameliorate some of the damage caused by free radicals during the reperfusion phase. For more details, please review the **article I posted earlier this month**.

No. 15 — Methylene Blue

One of the conditions that is most devastating for the heart and brain is temporary interruption of the blood supply as a result of a cardiac arrest or stroke. This deprives your tissues of oxygen, and without oxygen, they rapidly deteriorate.

When the blood vessel reopens, which is called reperfusion, and oxygen flows back into those oxygen-deprived cells, this tends to be the time of maximum damage, as loads of free radicals are generated once the blood starts flowing again. Methylene blue is another excellent emergency kit remedy as it is well documented to radically decrease the damage in reperfusion injuries.

It could work very well together with melatonin for an acute heart attack, but it's also a primary remedy for certain types of poisoning. It's found in every hospital in the world, as it's the only known antidote for metabolic poisons (any poison that interferes with oxygen transport or displaces oxygen, either from the blood or from the mitochondria).

For example, if you're admitted for carbon monoxide poisoning, they'll give you methylene blue intravenously. Cyanide is another example. By improving mitochondrial respiration and brain energy metabolism, methylene blue can also help improve cognitive performance and prevent neurodegeneration.

Importantly, methylene blue is a hormetic drug, which means that low doses have the opposite effect as high doses. While low dosages have an antioxidant effect, high doses are pro-oxidative and can kill bacteria and tumor cells.

It is also one of the absolute best ways to treat urinary tract infections as it concentrates in the bladder and has no negative impact on your microbiome.

Even when you're perfectly healthy, low doses of methylene blue will enhance oxygen consumption, mitochondrial respiration and ATP production above baseline, basically optimizing the whole system. So, it acts as a metabolic enhancer and not just an antidote for metabolic poisons and other inhibitory processes.

To learn more about this useful remedy, see my interview with Francisco Gonzalez-Lima, Ph.D., who is one of the foremost experts on methylene blue, featured in "**The Surprising Health Benefits of Methylene Blue**" that I posted April 18, 2022.

No. 16 — Boost Your Collagen

Collagen is the most common and abundant of your body's proteins, one of its primary purposes being to provide structural scaffolding for your various tissues to allow them to stretch while still maintaining tissue integrity.[14]

Remember that you are not going to get collagen from plants. It is only in animal proteins. But even if you eat animal products you likely aren't getting enough unless you are eating the connective tissues.

If you haven't focused on eating connective tissue from animals, then collagen supplements are a good source of amino acids like glycine, proline and hydroxyproline.

This is important, as these amino acids are the building blocks of your tendons and ligaments.

Additionally, there are peptides in collagen that enter your bloodstream intact, before they're broken down into their component parts in your digestive system, thereby benefiting connective tissues throughout your body.

Oral collagen has been shown to increase skin elasticity, hydration and collagen density in the dermis of older women. It can also help reduce joint pain and cardiovascular damage, strengthen bone, and improve wound healing, blood pressure, glucose tolerance and osteoporosis.

Due to the pervasiveness of contaminants in nonorganic collagen products,[15] I opt for products that are 100% organic. I also prefer unhydrolyzed collagen, as it's less likely to contain has a more balanced amino acid profile.

However, be aware that even organic collagen products, if made from cow hides, specifically, could be problematic. Many tanneries use sulfuric acid and chromium salts during processing, which would negate any organic claims.

An even better choice would be to make homemade bone broth using bones and connective tissue from grass fed, organically raised animals. It's the most natural approach of all and is, in my view, the best way to get the full range of benefits without the potential drawbacks. For more details see "**Collagen Benefits Skin and Joints, Study Confirms**," posted July 25, 2021.

No. 17 — Be Prepared for Emergencies

If you live in a hurricane-prone area, you may be used to the annual ritual of stocking up on extra food and bottled water. However, many happenings now point to the possibility of food, water and energy shortages becoming a reality in most areas of the world, so even if you've never had to prepare for potential emergencies before, it would be wise to do so now, regardless of where you live.

Securing a potable water source is perhaps the most important of all preparations, as you cannot survive without daily water consumption. In "How to Secure Your Water Supply for Emergencies," I review how to set up a rain barrel system, and how to purify whatever water source is at your disposal.

Other articles in which I provide prepping advice include "How Bad Will the Food Shortage Get?" "Get Prepared With Shelf-Stable Foods" and "Economy Expert Explains the Impending Polycrisis of Doom," which I posted last month.

No. 18 — Digestive and Systemic Enzymes

Your body secretes enzymes to catalyze biological reactions, making them essential to good health and longevity. Each organ has its own set of enzymes, and each enzyme has a different function. Enzymes can be broadly divided into digestive enzymes, metabolic enzymes and food-based enzymes, and there are two primary ways of using an enzyme supplement: digestively or systemically.

Taken with food, it will help digest the food. Taken on an empty stomach, the enzymes will pass through your digestive system and enter your blood circulation, providing systemic benefits. For example, fibrinolytic enzymes like lumbrokinase and/or serrapeptase, taken on an empty stomach, will help prevent blood clots, which is why I recommend them for COVID patients and/or those who have taken the COVID jab.

Lumbrokinase boosts circulatory health by breaking down fibrinogen (a fibrous protein that stops bleeding). It essentially digests any blood clots in your system, thereby reducing your risk of stroke. As such, lumbrokinase can be a very important supplement for anyone who has taken the COVID jab, which is notoriously associated with abnormal blood clotting. To have this effect, however, you have to take it on an empty stomach, away from food.

While your body continually produces enzymes, certain factors can limit this capacity, such as aging (which lowers production), genetics (which may inhibit your ability to

produce certain enzymes) and lifestyle choices such as diet, the amount of food you eat and whether or not you fast or smoke.

The healthier your lifestyle, the better your enzymatic activity will be, even without assistance from a supplement. For example, eating plenty of fresh, raw and/or fermented foods will supply your body with healthy enzymes. Sprouts are a particularly excellent source of live enzymes.

Fasting has also been shown to conserve enzymes. If you do not eat, you will not produce digestive enzymes, allowing metabolic enzyme production and activity to proliferate instead. A supplement can still be valuable, however, to counteract genetics, aging and a less than ideal lifestyle.

No. 19 — Vitamin C Protocol for Sepsis

One of the most important medical discoveries in recent years is Dr. Paul Marik's **vitamin C protocol for sepsis** — a progressive disease process initiated by an aggressive, dysfunctional immune response to an infection in the bloodstream, which is why it's sometimes referred to as blood poisoning.

Marik, former chief of pulmonary and critical care medicine at Sentara Norfolk General Hospital in eastern Virginia, discovered a simple and inexpensive way to treat sepsis using intravenous (IV) vitamin C and thiamine (vitamin B-1) in combination with the steroid hydrocortisone[16,17] — a discovery that may save tens of thousands of lives and billions of dollars each year.

His initial study[18] showed giving septic patients this simple IV cocktail for two days reduced mortality nearly fivefold, from 40% to 8.5%. Sentara Norfolk General Hospital, where Marik worked, has since made the protocol its standard of care for sepsis. Should you or someone you love get sepsis, knowing about this inexpensive treatment — and asking for it to be used — could be a lifesaver

It is important to recognize that the vitamin C in the Marik protocol is synthetic and not whole food vitamin C. In this context, it is the ideal agent to use, but please understand

that it is only for acute infections like sepsis. For everyday supplementation, it is far preferable to use whole food vitamin C as it will not harm your copper status and will actually improve it. The protocol Marik used for hospitalized patients was initially based on the Math+ protocol:

- Intravenous Methylprednisolone
- High-dose intravenous Ascorbic acid (vitamin C)
- Plus optional treatments Thiamine, zinc and vitamin D
- Full dose low molecular weight Heparin.

I will be speaking with Dr. Marik next month in Tampa at the **Vitamin C International Consortium Institute's annual conference**. In the meantime, you can find more information in "**The Newest Math+ Protocol**."

No. 20 — Hydration

Keep in mind that if you sweat a lot, either due to weather conditions, exercise or sauna use, you can easily deplete your body of beneficial minerals. In these instances, adding some electrolytes to your drinking water is a good idea. Merely hydrating with plain water can actually have negative effects on performance, both vigorous exercise performance and endurance exercise.

Salt and electrolytes are key for reducing muscle cramps, especially if you're exerting yourself in heat. Adding glycine also helps increase absorption of sodium in your intestine, decreases your core body temperature, and inhibits muscle cramps.

My favorite hydration strategy is to drink a quart of water about one hour before my workout and sauna, in which I have added two packets of our new electrolyte powder and 1 teaspoon of glycine powder (about 5 grams). Avoid commercial sports drinks, as they are typically loaded with sugar and/or artificial sweeteners.

For more details see "**Simple but Powerful Ways to Boost Athletic Performance**," posted March 14, 2022.

No. 21 — B Vitamins for Brain Health

B vitamins are important for brain health and the prevention of neurodegenerative diseases, migraines and psychiatric conditions.[19] For example, vitamin B2 (riboflavin) has been shown to have potent neuroprotective potential, offering protection against both migraine and Parkinson's disease by ameliorating oxidative stress, mitochondrial dysfunction, neuroinflammation, homocysteine neurotoxicity and glutamate excitotoxicity.[20]

Vitamins B6, B12 and B9 (folate, or folic acid in its synthetic form) have also been shown to reduce migraine disability.[21] This same trio may also help prevent cognitive decline and protect against more serious dementia such as Alzheimer's disease.[22] As with migraines, a primary mechanism of action here is the suppression of homocysteine,[23] which tends to be elevated when you have brain degeneration.

Deficiencies in B1, B2, B6, B8 and/or B12[24,25] have been linked to neuropsychiatric symptoms, and symptoms of schizophrenia have been shown to significantly improve on high doses of vitamins B6, B8 (inositol) and B12.[26]

Aside from regulating homocysteine (which takes a toll on your brain structure and function), another reason why B vitamins have such a powerful effect on a wide range of brain disorders and psychiatric conditions has to do with the fact that they:

- Have a direct impact on the methylation cycle
- Are required for the production and function of neurotransmitters
- Are required for the maintenance of myelin, the fatty sheath surrounding your nerve cells. Without this protective coating, nerve signals become slow and sporadic, which can lead to motor function problems, cognitive losses and changes in mood

B8 (inositol) aids cell communication, allowing your cells to properly interpret chemical messages and respond accordingly,[27] while B6, folate and B12 (in combination with SAMe) regulate the synthesis and breakdown of brain chemicals involved in mood control, including serotonin, melatonin and dopamine.

This is why a deficiency in one or more of these B vitamins can trigger symptoms of depression. High doses of B6, B9 and B12 in combination may also offset damage caused by air pollution.[28] For more details, see "This Deficiency Can Lead to Psychosis and Alzheimer's," posted April 20, 2022.

No. 22 — Ditch the Cholesterol Myth

After decades of research failed to demonstrate a correlation between dietary cholesterol and heart disease, the 2015-2020 Dietary Guidelines for Americans[29,30] finally admitted that "cholesterol is not considered a nutrient of concern for overconsumption."

A scientific review[31] published in the Expert Review of Clinical Pharmacology in 2018 also dismissed many long-held myths about cholesterol and the benefit of lowering it.

The paper presents substantial evidence that total cholesterol and low-density lipoprotein (LDL) cholesterol levels are not an indication of heart disease risk, and that statin treatment is of "doubtful benefit" as a form of primary prevention for this reason.

As a general rule, cholesterol-lowering drugs are not required or prudent for the majority of people — especially if both high cholesterol and longevity run in your family.

For more information about cholesterol and what the different levels mean, take a look at the infographic below. You can also learn more about the benefits of cholesterol and why you don't want your level to be too low in "Why Your Doctor Is Wrong About Cholesterol," posted in March 2022.

No. 23 — Quercetin for Respiratory Health

Quercetin is a potent antiviral supplement worth keeping on hand. Studies have shown it's effective against a wide variety of viruses, including:

- Herpes simplex virus type 1, polio-virus type 1, parainfluenza virus type 3 and respiratory syncytial virus[32]
- Dengue virus[33]
- Hepatitis B[34] and C[35]
- SARS-CoV-2[36]

Quercetin works much like hydroxychloroquine, a drug found to be effective against SARS-CoV-2 when used early in the disease process. Both are zinc ionophores, meaning they shuttle antiviral zinc into your cells. Many experts believe its benefits in the treatment of COVID are really the result of allowing zinc — which has potent antiviral activity — entrance into your cells.

That said, quercetin is also an antiviral in its own right. Its antiviral effects are attributed to three main mechanisms of action: Inhibiting the virus' ability to infect cells, inhibiting replication of already infected cells and reducing infected cells' resistance to treatment with antiviral medication.

Found naturally in apples, plums, red grapes, green tea, elder flower and onions,[37] the quercetin in these foods may also ameliorate obesity, Type 2 diabetes,[38] circulatory

dysfunction, chronic inflammation, hay fever and mood disorders.[39] For more details, read the **article I posted in December** last year.

No. 24 — Top 9 Nutrients for Brain Health

Nutrition plays an instrumental role in brain health and cognition. Nine of the most important nutrients for brain health and working memory are:

Marine-based omega-3 fat DHA — DHA is an essential structural component of your brain, and is found in high levels in your neurons, the cells of your central nervous system. When your omega-3 intake is inadequate, your nerve cells become stiff and more prone to inflammation as the missing omega-3 fats are substituted with omega-6 instead.

Low DHA levels have been linked to memory loss and Alzheimer's disease, and some studies suggest degenerative brain diseases may potentially be reversible with sufficient DHA.

Marine-based omega-3 fat EPA — EPA, meanwhile, appears to be particularly beneficial in the treatment of depression, as it helps lower levels of tumor necrosis factor alpha, interleukin 1 beta and prostaglandin E2 — three immune chemicals that tend to be elevated in those with depression.

Choline — Choline helps protect against Alzheimer's by reducing your homocysteine level, an amino acid associated with neurodegeneration and formation of amyloid plaques, and inhibiting microglia activation, which inhibits brain inflammation. Choline also helps keep your cell membranes functioning properly, plays a role in nerve communications and enables your body to make the brain chemical acetylcholine, which is involved in storing memories.

Phosphatidylserine — Phosphatidylserine is an amino acid derivative that is highly prevalent in neural tissue and plays an important role in the cellular function in your

brain. While your body can synthesize it on its own, you can also get it through food (such as mackerel, cod, egg yolks and organ meats) and/or a phosphatidylserine complex supplement.

Acetyl-L-carnitine — Acetyl-L-carnitine (ALCAR) has many beneficial effects on brain metabolism, protects against neurotoxic insults, and has been shown to benefit certain forms of depression.

Vitamin D — Activated vitamin D receptors increase nerve growth in your brain, and metabolic pathways for vitamin D also exist in your hippocampus and cerebellum, areas involved in planning, information processing and memory formation.

Vitamin B12 — A lack of B12 may contribute to brain shrinkage. Mental fogginess and problems with memory are two of the top warning signs that you have vitamin B12 deficiency, and this is indicative of its importance for your brain health.

MCT oil — Your brain can run on both glucose and ketones, and ketones are actually better. Ketones appear to be the preferred source of energy for the brain in people affected by diabetes, Alzheimer's, Parkinson's and maybe even ALS, because in these diseases, certain neurons have become insulin resistant or have lost the ability to efficiently utilize glucose. As a result, neurons slowly die off.

The introduction of ketones may rescue these neurons and they may still be able to survive and thrive. Ketones are what your body produces (when it converts fat as opposed to glucose) into energy, and a primary source of ketone bodies are medium chain triglycerides (MCT).

While coconut oil is one healthy option, MCT oil is a more concentrated source of ketones, so it tends to be more appropriate for clinical uses. My personal preference is straight C8 (caprylic acid), as it converts to ketones far more rapidly than do C10 fats, and will give you higher levels of ketones.

Probiotics — As your "second brain," the state of your gut also plays an important

role in your neurological and psychological health. Probiotics have been shown to reduce symptoms of depression and decrease pathological hallmarks of Alzheimer's, including amyloid plaques and tangles.

For more in-depth details, read "Top 9 Nutrients for Better Brain Health," posted July 27, 2022.

No. 25 — Astaxanthin

Commonly called "king of the carotenoids," astaxanthin is a potent anti-inflammatory antioxidant derived from specific types of microalgae called Haematoccous pluvialis.

The combination of high-potency antioxidant- and anti-inflammatory properties allows it to address a vast array of health concerns, including heart problems, joint problems such as rheumatoid arthritis, carpal tunnel syndrome and tennis elbow, and protection from damaging UV radiation by acting like an internal sunscreen.

Astaxanthin also appears to be one of the best ways to prevent and treat age-related macular degeneration (AMD), which is the most common cause of blindness in the United States. It actually accumulates in the retina, thereby protecting the retina against damaging oxidation.

Astaxanthin is a carotenoid, but it has a unique structure and works in unique ways. For example, most other antioxidants are depleted after they've transferred their free electrons. But astaxanthin has a massive surplus, allowing it to remain "active" far longer — at least one order of magnitude more than most other antioxidants.

It donates electrons to neutralize free radicals, and then rejects the excess energy primarily as heat. But the astaxanthin remains intact — there are no chemical reactions to break it down, which is what occurs in most other antioxidants.

Astaxanthin also acts on at least five different inflammation pathways, and maintains balance within the system. Another major difference is in the number of free radicals it

can handle at any given time.

Most antioxidants, such as vitamin C, E and various others, can typically only handle one free radical at a time, while astaxanthin can handle more than a dozen free radicals simultaneously. Unlike other antioxidants, especially synthetic carotenoids, astaxanthin also lacks the ability to turn into a pro-oxidant, even at high levels, making it one of the safest.

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