

Advances in Health Technology

When it comes to health, the ideal situation is obviously to prevent a disease from occurring in the first place. However, we all face our own personal variety of genetic weaknesses, stress factors, temptations, physical and mental challenges, hormonal fluctuations, etc., that invariably lead to one health problem or another. Even just the normal wear-and-tear that comes with aging will eventually take its toll.



Dr. David Williams

As such, while I focus a lot on prevention, learning how to maintain health or live as well as possible with a problem after it develops is just as essential. There will be times when relying on procedures, tools, and techniques that allow you to do this may be the only option. Sometimes it might be medication or surgery. Other times it might involve utilizing new technology.

Technology has been evolving at such a rapid rate that often the public is unaware of the available tools that could dramatically change their life. The following are just a few examples of health technologies that might help you or someone you know.

IrisVision

Macular degeneration is the leading cause of blindness in the 50+ population. It causes blurred vision and/or a blind spot in the center of the field of vision.

Scientists at Johns Hopkins, UC Berkeley, and the Chicago Lighthouse for the Blind have developed a virtual reality headset that is used with the Samsung Galaxy cell phone. It allows those with macular degeneration to perform everyday activities again. For many, it is a game changer.

By zooming in on peripheral areas of vision displayed by the phone's camera, the relative size of the central blind spot appears so much smaller, that the brain doesn't perceive it anymore. Using the headset, people have reported being able to read, watch TV, view a computer screen, garden, see people's faces, and engage in other activities that had otherwise become impossible.

Participants in one study started out with, on average, 20/400 vision—which is considered legally blind. (This means what someone with normal vision can see at 400 feet, these participants would only be able to see at 20 feet away.) Using the headset technology, their average vision

was 20/30, which is fairly close to the normal 20/20 vision.

Additionally, since most people with macular degeneration have difficulty distinguishing different colors, the phone contains a color-boosting software application.

One of the other features is that the software causes the phone's camera to automatically focus on whatever the viewer is looking at. This allows the user to instantly go from an activity like reading a book or a computer screen to looking into the distance, without having to refocus the device.

The device, called IrisVision, includes both the headset and the phone. The cost is \$2,950 plus tax and shipping. This price includes two or three hands-on sessions, where a specialist will come to your home and teach you how to operate the device.

If you or someone you know suffers from macular degeneration, I highly recommend looking into this device. You can get more information on their website (irisvision.com) or by calling 855-207-6665 for a free consultation.

Smart Watches

On another front, Apple recently received FDA approval to market their latest Apple Watch (Series

4) for its ability to conduct an electrocardiogram to measure heart rhythm. The watch also alerts you if you are at risk of experiencing atrial fibrillation. Additionally, this watch has the technology to detect when you experience a hard fall, and then calls emergency services for help, and notifies your emergency contacts and provides them with your location.

Apple, as well as other companies that manufacture fitness watches, are working on technology that can monitor blood sugar levels without having to do a finger stick for blood—a non-invasive screen for diabetes and other health problems.

As devices become more and more sophisticated at collecting data, there's the need, or desire, to "monitor" that data. For example, when your phone connects to free Wi-Fi, there are programs in place that can track your physical movements, how long you stay

in one place, etc., and how those relate to your buying choices. This information can then be used to send specific advertising to your phone, which has been proven to influence your shopping behavior and generate additional revenue for businesses.

“Smart” Toilet Seat?

If you can believe it, a toilet seat-based cardiovascular monitoring system will be in use within a few months as well. The company, Heart Health Intelligence, will sell the seats to hospitals, who will then issue them to heart failure patients upon discharge.

More than a million new cases of congestive heart failure are diagnosed each year in this country alone. After hospital treatment, the readmission rate for these patients is very high—and costly. Within 30 days of discharge, 25 percent of patients are readmitted, and after

90 days of discharge, 45 percent are readmitted. If the patient is monitored daily, problems can be resolved by modifying medication or with a doctor visit, rather than returning to the hospital.

These specialized toilet seats are able to measure the electrical and mechanical activity of the heart, including heart rate, blood pressure, blood oxygenation levels, the heart's stroke volume (the amount of blood pumped out of the heart at every beat), and the patient's weight. ([*JMIR Mhealth Uhealth* 2019 Jan 18;7\(1\):e12419](#)).

This toilet seat device gives new meaning to the phrase, “You can run, but you can't hide.” As I come across any new technologies that I think might be helpful, I'll share them with you. And if there are any that have been helpful to you and you'd like to share, let me know and I can pass those along as well. ■

NEWS TO USE *from around the world*

Diet and Cataracts

XI'AN, SHAANXI, CHINA— Researchers from Xi'an Jiaotong University in China and the University of South Australia in Adelaide have analyzed 20 different studies from around the world, trying to determine if there's a

dietary connection to cataract formation. ([*Am J Clin Nutr* 2019 Jan 1;109\(1\):43-54](#))

A cataract is the clouding of the eye's natural lens. Worldwide, cataracts are the most common cause of vision loss and affect more than 45 million people.

It's a progressive condition that typically begins to show up around the age of 40. Cataract extraction surgery to restore vision has become commonplace among the elderly in this country. However, for many living in other parts of the world, surgery isn't an option

Alternatives. Author: Dr. David Williams; Editor: Larissa Long

ISSN# 0893-5025. Published monthly for \$69.99/yr. by Mountain Home Publishing at 6710-A Rockledge Dr. Ste. 500, Bethesda, MD 20817. Editorial Office: 6710-A Rockledge Dr. Ste. 500, Bethesda, MD 20817. Periodicals postage paid at Bethesda, MD, and at additional mailing offices. Postmaster: Send address changes to *Alternatives*, PO Box 11, Montoursville, PA 17754. © Healthy Directions, LLC. All rights reserved. Photocopying or reproduction is strictly prohibited without permission from the publisher.

The approaches described in this newsletter are not offered as cures, prescriptions, diagnoses, or a means of diagnoses to different conditions. The author and publisher assume no responsibility in the correct or incorrect use of this information, and no attempt should be made to use any of this information as a form of treatment without the approval and guidance of your doctor.

Dr. Williams works with Healthy Directions, LLC, to develop his unique formulations that supply many of the hard-to-find nutrients he recommends. Dr. Williams is compensated on the sales of these nutritional supplements and health products, which allows him to continue devoting his life to worldwide research and the development of innovative, effective health solutions.

NEWS TO USE *from around the world (continued...)*

and cataracts have become the principal cause of blindness in the world. Unoperated cataracts now contribute to 35 percent of all blindness.

After reviewing various studies, these researchers found a very strong link between antioxidant intake and cataract formation. In a nutshell, this is the first study of its kind to find that a higher intake of antioxidants and vitamins was directly linked to a lower risk of cataracts.

The high-antioxidant foods specifically mentioned in the study were dark green vegetables (spinach, broccoli, kale), carrots, citrus fruits, capsicum (chilies), and tomatoes. These particular foods happen to contain some of the highest levels of carotenoids.

I personally would add a few others that fall into this category: sweet potatoes, pumpkins, and apricots.

Carotenoids are the pigments produced in plants, algae, and certain photosynthetic bacteria. This is why there's such a high carotenoid content in the blue-green algae spirulina and the green algae chlorella.

There are more than 700 carotenoids, and you may recognize the names of some of the more common ones: carotenes, lutein, zeaxanthin, and lycopene. Lutein and zeaxanthin are taken up by the macula of the eye, where they absorb up to 90 percent of blue light, help protect the visual structures in the eye, and maintain optimal visual function.

You'll find these carotenoids in quality multivitamin supplements. I think they are so important that not only have I included

them in my daily multivitamin/mineral supplement, I've also used carotenoid-rich spirulina as the base ingredient.

Based on this research, it was estimated that if we could delay the onset of age-related cataracts by just 10 years, the number of people requiring cataract surgery would be cut in half.

The same foods mentioned in the study also happen to be excellent sources of bioflavonoids, and research has shown that increased intake of bioflavonoids can help prevent macular degeneration—another leading cause of blindness.

Keep in mind that the absorption of carotenoids requires the presence of fat in a meal. One of my favorite fats to use to enhance the absorption of carotenoids is avocados (or avocado oil). One study found that simply adding either to a salad or combining them with salsa resulted in the absorption of seven times more alpha-carotene, 15 times more beta-carotene, and five times more lutein. ([J Nutr 2005 Mar;135\(3\):431-6](#))

Another study found that consuming scrambled eggs with carotenoid-rich foods also increased their absorption. With eggs, lutein and zeaxanthin absorption increased 4- to 5-fold and alpha-carotene, beta-carotene, and lycopene increased 3- to 8-fold. ([Am J Clin Nutr 2015 Jul;102\(1\):75-83](#))

Speaking of eggs...after raising chickens here on the ranch for several years, I can pass on a few ideas and suggestions that you might find helpful...

Typically, you'll read that refrigerated eggs will last anywhere

from three to five weeks. For the most part, eggs will last much longer than most people realize. However, when you buy them in the store, it's difficult to know exactly when they dropped out of the backside of the chicken. As soon as an egg drops, it starts to slowly decay. The chicks within have to breathe, so egg shells are naturally gas permeable and release carbon dioxide, even if they are fertilized. As the carbon dioxide is released, the interior of the egg becomes less acidic and the chemistry of the albumin, or egg white, starts to change.

If you want to slow the release of carbon dioxide and increase shelf life, it's best to store eggs in a sealed carton or container in the lower part of the refrigerator. Storing them in an egg rack inside the door isn't as cool. It also agitates the eggs, encouraging mixing within the albumin, and when the door is opened, warm air removes even more carbon dioxide from the egg shell surface.

Fresh egg whites have a pH between 7.6 and 7.9 and often a cloudy appearance due to a higher carbon dioxide level. As the carbon dioxide (which forms a weak acid) dissipates, the pH of the egg whites increases to around 9.2. At the higher pH, the egg white doesn't stick as tightly to the inner membrane of the egg shell.

The tip here is that older eggs are better for hard boiling because the shells will peel easier. Older eggs are also better for making meringue.

The best way to find out how old eggs are is to put them in a bowl of water. Fresh eggs will sink to the bottom and lay on their sides. Older eggs will also sink

NEWS TO USE *from around the world (continued...)*

but remain in an upright or tilted position. Eggs too old and unfit to eat will float.

Fecal Transplants Prevent Organ Rejection

BALTIMORE, MARYLAND—I believe that fecal transplants are one of the most underutilized therapies today. I have reported on numerous studies that have shown that fecal transplants have a 90+ percent cure rate in *C. difficile* infections and greatly improve, if not cure, irritable bowel syndrome. And now there's research that strongly suggests fecal transplants can help to prevent organ transplant rejection.

To prevent the rejection of organs, transplant recipients are given strong immune-suppressant drugs. These drugs subdue the actions of the immune system, which would normally recognize the donated organ as a foreign invader and reject it. However, even though drugs lessen the reaction of the immune system, it is still functioning. Often, after several years, the organ is scarred and inflamed due to the continual

low-level attack. Additionally, patients are very susceptible to infections while taking these immune-suppressant drugs.

Since 90 percent of our immune system resides in the gut, researchers wanted to see if changes in gut bacteria could benefit organ recipients without the use of immune-suppressant drugs.

Obviously, this initial work was performed on animals. The transplant recipients were divided into two groups. Prior to the transplant, one group was given a fecal transplant from other pregnant animals. During pregnancy, the body naturally suppresses the immune system to allow the fetus to develop without being rejected. The second group was given a fecal transplant from non-pregnant animals.

Then a heart from an unrelated animal was transplanted into the belly of each animal, without removing their own heart. This is the standard method of testing transplant drugs.

After 40 days, all of the hearts placed in the five animals that received fecal transplants from pregnant animals were alive and

viable. Only one of the hearts survived in the second group of five animals. ([JCI Insight 2018 Oct 4;3\(19\)](#))

This is yet another in a long list of studies which demonstrate that bacteria in our gut control our immune system's response to whatever we are exposed to in our environment.

If you suffer from an autoimmune disease, of which there are over 100, it only makes sense to focus on the health of your gut. If you have any chronic condition that seems to respond to anti-inflammatory medications, that could also be a telltale sign that reestablishing the microflora in your gut needs to be one of your goals. Eat more fermented foods, increase your fiber intake, cut out sugar, and take a daily probiotic.

If the general public ever learns about the almost-miraculous potential of fecal transplants, this procedure could be a game changer for millions. Unfortunately, there's still a stigma involved. And the FDA continues to paint it as a dangerous procedure that needs to be tightly regulated. ■

Can 2 Nutrients Reverse Alzheimer's?

Most medical research begins in animals, often mice, long before actual human studies take place. Since many animal studies never translate into human treatments, I am often hesitant to report on even very positive animal studies.

Every circumstance is different, though, and I take into account

the safety of the treatment, the potential side effects or downsides, and other factors. Based on these criteria, deciding to report on the following research data was an easy decision for me.

Researchers at the University of Southern California were recently able to reverse the symptoms of

Alzheimer's disease in animals using two nutritional compounds.

The study involved four groups of mice with Alzheimer's and an equal number of healthy animals.

Before and after the study, all of the animals were given a battery of neuropsychological tests that roughly equate to the tests given to assess dementia in humans.

While mentally healthy animals performed as expected, impaired ones exhibited behaviors analogous to humans with Alzheimer's disease.

Over three months, the diet of the Alzheimer's animals was supplemented with epigallocatechin-3 gallate (EGCG, or green tea extract) and ferulic acid (FA), a plant sterol complex found in carrots, tomatoes, rice, wheat, and oats.

The animals were given either a combination of EGCG and FA, EGCG alone, FA alone, or a placebo. At the end of three months, the combination treatment completely restored working memory, and the mice with Alzheimer's performed all the testing procedures just as well as the healthy mice. ([J Biol Chem 2019 Feb 22;294\(8\):2714-31](#))

The combination of these compounds appeared to reduce nerve inflammation and oxidative damage in the brain, which are two of the key characteristics of Alzheimer's disease. The compounds also appeared to block the process that leads to the formation of amyloid plaques that gum up the brain in Alzheimer's patients.

What makes this study even more amazing is that when you convert the animal dosages to equivalent human dosages, they are well within the ranges that can be taken and tolerated in supplement form.

These supplements have routinely been used safely and effectively for decades, but the higher doses and combination of nutrients appear to be the key to reversing the Alzheimer's symptoms in these animals.

EGCG and FA were given at the human equivalent dosage of 30 milligrams for every 2.2 pounds

of body weight. So, for someone weighing 150 pounds, the daily dosage would be 2 grams (2,000 milligrams) daily of each compound.

There are numerous supplement suppliers that market green tea extract. [NOW Foods](#) has one of the least expensive products in this category. A bottle of 180 400-milligram capsules runs about \$13. At five capsules a day (totaling 2 grams), taking this dosage would cost about \$12 a month.

Ferulic acid is a lesser-known compound and not as widely available. However, there have been earlier animal studies demonstrating its safety and effectiveness as a scavenger of free radicals. It is widely used in many skin care formulations to help delay skin aging due to sun exposure. In several countries, it is also used as a food additive to prevent fats from going rancid.

Other studies have indicated that oral ferulic acid may be able to prevent/treat a wide variety of diseases including cancer, diabetes, hyperlipidemia, high blood pressure, fatty liver, hypercalciuria, kidney stones, and heart disease. Another study also focused on FA for preventing Alzheimer's disease in animals. In that study, the compound was found to have a protective effect and the researchers commented that it could be a useful preventative agent against the disease. ([Drugs Exp Clin Res 2001;27\(1\):17-26](#)) ([Br J Pharmacol 2001 May;133\(1\):89-96](#))

The company [Source Naturals](#) sells 250-milligram tablets in a 60-count bottle for about \$16. The dosage in this study would require taking eight tablets daily. At this

rate, you'd be looking at a cost of about \$64 a month.

To achieve the equivalent human dosages that were used in this study would cost around \$75 a month. And if the end results are anywhere close to what the researchers observed in their study, it would undoubtedly qualify as one of the most cost-effective Alzheimer's treatments ever. (Buying 99+ percent pure ferulic acid powder in bulk would reduce the monthly cost by another 25 percent.)

At least 5.7 million Americans and 46.8 million others worldwide are now living with Alzheimer's. It is believed that these numbers will triple by 2050. Alzheimer's has a titanic impact on its victims and their family and caregivers. The suffering is immeasurable.

If you have a friend or loved one suffering from this horrendous disease, I would pass this information along. I see no downside to using either of these compounds now. At best, it will be 10, 12, or 15 years before some pharmaceutical company develops a synthetic drug version of what is readily available today.

Red Light Boosts Efficacy

Red light either from lasers or red LEDs have been shown to improve mitochondria energy production, increase blood flow, enhance cognitive function, and even remove amyloid plaques associated with Alzheimer's. And it appears that the beneficial effects are even greater when used along with green tea extract. ([Front Neurosci 2016 Jan 11;9:500](#))

Researchers in Germany reduced the amyloid deposits in human brain cells by 60 percent using a

combination of green tea extract (EGCG) and an intermittent red laser light in vitro.

When the brain cells were bathed in a solution containing the green tea extract, the amyloid plaques were reduced by 50 percent. The red light alone resulted in a 20 percent reduction.

Apparently, when on, the red light pushes water out of the brain cells, and then when switched off, the cells suck in water and any other molecules, including the green tea extract, from their surroundings. In this study, the light was repeatedly turned on and off for one minute.

In other brain studies, red LED is applied to the brain using a skull

cap impregnated with the lights. The lights are pulsed for a period of 20 minutes, three times a week. It seems this “pumping” action is what allows more of the green tea to enter the cells.

The cytostatic effects of green tea extract are well known (its ability to inhibit cell growth and division). That’s why it can help slow and contain cancer cells. This attribute and its antioxidant effects have been shown in numerous studies to function as both a preventative and treatment for practically all neurological diseases like Alzheimer’s.

While green tea extract works on its own, you can augment

the effects with an infrared LED therapy pad.

When I first discussed the benefits of using red light therapy 25 years ago, most people thought I was a nut case. I’m not sure that perception has changed, but now both the public and clinics are using this type of therapy as an effective way to treat pain, acne, wounds, traumatic tissue injuries, and neurological problems.

Units suitable for home use can be found easily with an online search for infrared therapy pads. Using one of these along with the green tea extract and ferulic acid is certainly something to consider in cases of Alzheimer’s disease. ■



Coffee & Caffeine Tolerance

Question: *My new husband has a habit of drinking three to four cups of coffee in the morning and another three or four in the evening. I personally have always loved the smell of brewing coffee, but never acquired the taste for it. At his insistence, I recently tried it and actually liked it. However, just one cup makes me hyper and jittery. I certainly can't drink it anywhere near bedtime like my husband does, or I won't be able to sleep. It doesn't seem to bother him at all. He says that's normal and will pass with time as I get used to the caffeine. I assume different people have a different response to caffeine, but is that something that will change for me with continued use?*

—Robin T., Northbrook, IL

Answer: Like most other drugs, caffeine affects people in different ways. It's possible that your husband is one of the reported 10 percent of the population that carries a gene that allows him to consume caffeine without experiencing any of the side effects.

But most people seem to fall into a couple of other categories. If they have the normal sensitivity to caffeine, consuming between two and four cups of coffee a day (200 to 400 milligrams of caffeine) doesn't cause any issues. Individuals very sensitive to caffeine may not be able handle even 50 milligrams of caffeine. (The caffeine in a small 5-oz cup of tea typically contains about 30 milligrams.)

It's been my experience that your ability to handle caffeine is related to the strength of your adrenal glands and, to a smaller degree, the pituitary gland.

Caffeine blocks what are called adenosine receptors, whose job it is to modulate and slow down nerve activity, especially during sleep. Caffeine causes nerve activity to increase. This, in turn, causes the pituitary gland to call on the adrenal glands to produce and release the hormone adrenaline, just like it does during stress or a fight-or-flight situation. Adrenaline causes an increase in your blood sugar level.

This rise in blood sugar is a large part of the “jump start”—increased alertness or energy boost—people receive from coffee. And this is also what makes caffeine addictive.

(In the early formulas, Coca-Cola and other soft drinks contained an extract from kola nuts, which have two to three times the caffeine of coffee. I don't think any soft drinks, at least in this country, use kola nut extract in their formulations anymore. Instead, they just add other flavors and caffeine. Caffeine combined with sugar or high-fructose corn syrup just increases the adrenal response and adds to the addictive nature of these drinks.)

As for building up a tolerance to caffeine, research shows that typically doesn't happen, and if it does, the effect is very minimal. As long as your pituitary and adrenal glands aren't fatigued or weak, caffeine will trigger that boost. Tolerance isn't the problem. Rather, it is dependency. Withdrawal from caffeine affects about 50 percent of those using it repeatedly. Symptoms vary, but can include sleepiness, perceived fatigue, brain fog, nausea, and headaches.

The increased consumption of higher levels of caffeine will tend to deplete the adrenal glands, and if continued, affect pituitary function. Slipping into hypoadrenia is a gradual process and why most people (doctors included) never make the connection between caffeine, sugar, and adrenal symptoms.

Benefits and Drawbacks of Caffeine

Consuming reasonable amounts of caffeine does appear to have some possible health benefits. Some studies have shown it may help prevent Parkinson's disease, liver disease, liver cancer, and type 2 diabetes.

On the other hand, consuming 200 milligrams of caffeine daily can double the risk of miscarriage in pregnant women. And routinely boosting blood pressure and creating a spike in blood sugar levels with stress hormones is not the best idea. Combine this with the fact that a huge segment of our population suffers from blood sugar problems (either hypoglycemia or type 2 diabetes) and you can understand why coffee may not be the best choice of drinks.

Looking at the research, I think most of the benefits associated with coffee are related to its high antioxidant content, and not the caffeine. A

study from the University of Scranton found that coffee was the number-one source of antioxidants in the US diet. (This reminds me of the fact that the number one vegetable consumed in the US diet is potatoes...in the form of French fries.) Fruits and other non-fried vegetables would be a more beneficial source of antioxidants than coffee.

Obviously, the key word here is “reasonable.” Since everyone is different, I can't tell you exactly what that amount of caffeine might be for you. However, I suspect that our society is over-caffeinated. And with the advent of energy drinks and a younger age group now consuming coffee and ever-increasing amounts of soda, I think over the next 10 or 15 years we'll know more about the effects of caffeine on our health.

Personally, I don't drink coffee, and I wouldn't recommend that anyone start the habit to achieve any potential health benefits. I never developed a taste for it. However, if you enjoy coffee in moderation and don't have adrenal or blood sugar issues, I doubt there's much, if any harm. Coffee is consumed billions of times a day around the world and has been for centuries. From the research I've see thus far, when consumed in moderation, the pros and cons of coffee are about equal.

Gelatin for Estrogen Dominance

Question: *A while back, a friend gave me one of your newsletters where you talked about estrogen dominance. I think I could be the poster child for it. I've followed your advice in that issue and it changed my life. Now I'm a subscriber. Are there any other things I could be doing for estrogen dominance?*

—K.T., Los Angeles, CA

Answer: I am so happy the information has been helpful. I went back and looked at the issue you mentioned, and those recommendations are still as valid today as when I wrote them back in September and October of 2012. But there is another recommendation I can add.

I would suggest reading my past articles on gelatin if you have those available. If not, no worries. I'll briefly explain why including gelatin in your diet may help you even more.

Glycine is one of the major amino acids in gelatin. It has many positive attributes when it comes to health. It is anti-inflammatory; it improves issues

with poor digestion due to low stomach acid; it heals the damage to cells that line the intestines, which can prevent/treat leaky gut syndrome; and it improves thyroid function. If you recall, poor thyroid function is connected to estrogen dominance.

In addition to glycine, gelatin is a great source of the amino acid proline. Both proline and glycine protect the liver from damage and aid in its detoxification.

We continually hear that muscle meat, particularly beef, is inflammatory. Consuming gelatin helps counteract the inflammatory aspect associated with meat consumption. This inflammation is caused by an imbalance of amino acids. An overabundance of amino acids like histidine, tryptophan, cysteine, and methionine, which are high in pure muscle meat, can result in greater systemic inflammation. Back when people used to eat the entire animal, this wasn't much of an issue, but dietary preferences have changed.

Also, some amino acids found in higher amounts in muscle meats (beef, lamb, fish, and poultry) can be labeled as "thyroid suppressing." These include tryptophan and cysteine. The amino acids in gelatin from the skin and bones of the animal balance and help negate the ones that are considered thyroid suppressing. Since most people don't consume the bone and skin, or combine them with bone broth, soups, or stews, consuming gelatin is a way to help achieve this balance.

Additionally, glycine works to oppose many of the dilatory effects of estrogen, while sparing progesterone. Low progesterone is the hallmark symptom of estrogen dominance.

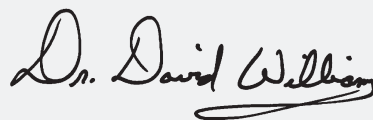
Practically everyone would benefit from including gelatin in their diet, and this is especially true in the case of someone with estrogen dominance.

I find gelatin powder mixed with a smoothie one of the best and easiest ways to make sure I take it every day. I am not a stickler on measuring it exactly, but take in the neighborhood of 10 grams a day.

I also consume, and highly recommend, bone broths. These can easily be made with oxtails, chicken necks/skin/bones, and beef bones. Slowly simmering these in water for three to four hours (no longer than that), cooling the liquid, and then removing the bones is a simple way to make some of the most nutritious liquid broth imaginable.

Finally, rather than always eating muscle meats, I suggest trying dishes like osso buco, oxtail soup/stew, and lamb shank stew, which naturally contain the gelatinous compound that is so beneficial to your joints, hormonal system, intestinal tract, skin, and every other part of your body.

Until next month,



This Month Online



Visit my website at **drwilliams.com**, where you'll find information and recommendations for many of your top health conditions, including:

- *Strengthening Immunity*
- *Hiatal Hernia, GERD, and other Digestive Concerns*
- *Cognition and Brain Health*
- *Joint Health*

Stay in touch between newsletter issues by signing up for my weekly Health E-News. Simply visit **drwilliams.com** and submit your email address.

You can also read more at my website, which covers a variety of topics. Here are just a few recent additions:

- [*How to Avoid Constipation*](#)
- [*Estrogen Dominance: A Growing Problem*](#)
- [*How to Remedy a Bad Gallbladder*](#)

Contact Us Here

- *To submit a Mailbox question, suggest an article topic, or make a comment about this month's issue, email **feedback@drdavidwilliams.com**.*
- *For customer service matters such as address changes, subscription renewals, or to order back issues or reports, call 800-527-3044 (Monday through Friday, 9:00 am–5:00 pm EST) or email **custsvc@drdavidwilliams.com**.*