



Eastern Journal of
Complementary &
Alternative Medicine

**The Peer Reviewed Journal
for
Complementary
and
Alternative Medicine**

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Introduction

The Eastern Journal of Complementary and Alternative Medicine, EJCAM, is a peer reviewed journal affiliated with the Eastern School of Acupuncture and Traditional Medicine. EJCAM however acts independently from the school in pursuit of its own mission.

At EJCAM we consider the center of alternative medicine to be the medicine that derives from indigenous Chinese medicine that has a history of over 3000 years. In the United States, Chinese medicine has a relatively short history. It became better known here when the US and China developed relations in the 1970's. Since that time Chinese medicine has gained acceptance but has met with resistance from the scientific community. The resistance stems from the fact that acupuncture, herbs, and other forms of traditional medicine are derived from experience. In today's world medicine is accepted when science proves its statistical significance. Greater acceptance of traditional medicine will be achieved when scientific study provides the proof beyond what experience has already shown.

Researchers in the field of traditional medicine need access to qualified peer review and widespread distribution of their work in order to achieve acceptance in the US. EJCAM aims to provide that review and distribution. The vision of EJCAM includes greater acceptance of traditional medicine and a healthcare field that offers people the best of traditional and western medicine. This integration can be a true blessing for humanity.

The Eastern Journal of Complementary and Alternative Medicine is dedicated to Julie Puretz, the founder of the Eastern School of Acupuncture and Traditional Medicine. As traditional medicine has grown in the US, the advancement has been led by people like Julie Puretz. Julie Puretz had the strength and vision to advance traditional medicine so students could learn, teachers could teach and people could heal. She started the Eastern School in New Jersey where there was no school to provide this medicine. May our humble effort with this journal continue to achieve the goals that she inspired in all of the people who have benefitted from her work!

The Mission of the Eastern Journal of Complementary and Alternative Medicine

The mission of EJCAM is to publish and distribute peer reviewed articles of complementary and alternative medicine that stimulate the knowledge of all medical professional healers and enhance the health and wellbeing of all people.



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Authors are welcome to submit articles to EJCAM about topics such as acupuncture, moxabustion, Asian medicine, and complimentary or integrative western medicine. EJCAM publishes original research, clinical practice articles, case studies, systematic reviews, meta-analyses, literature reviews, conference proceedings, translations, and related topics. Capstone and thesis projects may also be submitted.



All submissions will be online. All submissions must meet review by the editor according to standards accepted by academic journals that utilize AMA reference or as published on the EJCAM website, www.ejcam.org. If initially acceptable, submissions are sent to peer reviewers who have expertise in the topic submitted. Articles reviewed by peer reviewers will result in the following: acceptance, acceptance with minor changes, rejection, or returned for major revisions.

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Please submit article manuscripts to EJCAM Editor at gormleydmd@aol.com with subject "EJCAM Submit". Submissions will be acknowledged and the review process may take up to 90 days. At the end of the review process authors will be notified of manuscript status.

Message from the Editor

Our new journal name is the Eastern Journal of Complementary and Alternative Medicine, EJCAM. This name links our journal to our affiliation with the Eastern School of Acupuncture and Traditional Medicine and identifies the basis of our medicine. According to the National Institute of Health the following definitions apply: If a non-mainstream practice is used together with conventional medicine, it's considered "complementary." If a non-mainstream practice is used in place of conventional medicine, it's considered "alternative." EJCAM is both and has arrived.

We live in a time where information and ideas are expanding at great speed. Ideas and information needs to be shared. Our intention is to attract manuscripts of academic and research nature that will improve knowledge in the world of complementary and alternative medicine. EJCAM will spread knowledge.

Students, teachers, and practitioners of complementary and alternative medicine come from a wide range of backgrounds. The basic connection of these backgrounds and purposes is to improve life. As EJCAM is launched we take a humble approach to our contribution to the lofty goal of improving life. We welcome assistance from all who believe in this goal. EJCAM aims to benefit many.

Welcome to our journal, EJCAM.

Thomas J Gormley, Editor in chief

A case study of moxibustion for flea bite symptoms

By Thomas J Gormley, DMD, LAc

Abstract

Flea bites can cause significant irritation and allergic reaction especially in sensitive human hosts. Moxibustion has a history of being therapeutic for a multitude of disease conditions. A case study will be presented on how direct cone moxibustion affected the symptom of itching due to flea bites in a sensitive individual.

Keywords

Flea, insect bite, moxibustion, itch, scratch, burn cream, artemisia vulgaris, acupuncture, shiunko

Background

Fleas consist of many different species and have a wide range of territory around the world ¹. Fleas are blood sucking insects and the most common species that humans encounter is the cat flea (*Ctenocephalides felis*) ². There are several significant flea borne diseases including plague, typhus, rickettsia, and bartonella ¹. There can be significant economic loss due to flea infection and infestation, and the pathogenic tissue reaction to flea bites can last for days, weeks, and months ¹. Itching or pruritis due to flea bites is a significant symptom and scratching of the affected skin may contribute to disease progression ¹. Itch is a reaction to flea saliva which brings on the release of histamine and prostaglandins ³⁻⁴⁻⁵. Alleviating the itch symptom is considered difficult ⁶. The use of moxibustion has been used historically to treat insect bites ⁷. This report will focus on relieving itching and subsequent host scratching of flea bite lesions by application of direct cone moxibustion. A case involving a patient presenting with flea bites and receiving treatment with moxibustion will be presented.

Case report

A 68-year-old Caucasian male in general good health reported for treatment of flea bites. His medical history included childhood diseases of measles, mumps, rubella, and chicken pox, appendectomy and right inguinal hernia repair age 4, left inguinal hernia repair age 55, seasonal allergy to trees and grass, and no medications except Vitamin D3 and B12 supplements. He reported a history of multiple episodes with contact dermatitis including poison ivy, so he considers his skin to be sensitive to environmental irritants. His diet is vegetarian and his body type is thin but fit.

He reported that he currently had several flea bites on his legs. On the previous day he saw fleas on his legs and caught 4 of them which he disposed. He stated that he knows how to identify fleas from numerous past experiences. His history with flea bites is that his skin itches for approximately 4 weeks and they cause uncontrolled scratching throughout that time. He stated that he is abnormally sensitive to insect bites in general but fleas are a big concern for him. His building was scheduled for flea extermination but he wanted relief from the bites he already had. His chief complaint was the itching and scratching from flea bites.

A traditional Chinese medical (TCM) examination showed the patient's pulses were strong and full but slightly weaker in both right and left kidney positions. His tongue was slightly scalloped on the edges and slightly pale with a thin white coat. His TCM diagnosis was mild spleen, kidney, and blood deficiency with local Qi and blood stagnation at the bite sites. On physical examination, his legs presented with a total of 25 red, slightly raised, roughly circular wheals of approximately 3 to 4 millimeters in diameter.

The patient reported that his usual self treatment consisted of washing the bites with soap and water and application of over the counter diphenhydramine cream. He would also soak the lesions in hot water. Each of these remedies was temporary, lasting for several minutes to a couple of hours. He stated that heat also produced a soothing feeling. He had previously been treated for environmental allergies with acupuncture so he wanted to try this therapy for his current problem.

After a discussion with the patient it was concluded that moxibustion could be a good therapy since the heat could be soothing and the moxibustion could reduce the local stagnation caused by the bites. The author had previously treated chigger bites and black fly bites successfully using direct cone moxibustion with artemisia vulgaris. The treatment for the bite itch would be a branch treatment.

A literature review revealed evidence of moxibustion in the form of Zhu Ru, bamboo shavings, being used for treating insect and snake bites by resolving toxins, dispersing swelling, and stopping pain⁷. The author's experience with using moxibustion consisted of using artemisia vulgaris delivered directly or indirectly to provide various therapeutic effects⁸. Artemisia vulgaris is a bitter and acrid herb that produces warmth and is pure yang in nature⁹. It has the ability to restore yang from collapse and is the herb more commonly used for moxibustion treatments⁹.

The treatment regimen was to coat each lesion with a thin layer of shiunko burn cream¹⁰. Then 3 moxa cones of 3 millimeters by 3 millimeters were placed and burned in succession on each lesion. The cones are ignited with an incense stick and left to burn until the patient indicates they are hot (and immediately pinched to cool by the practitioner) or the practitioner sees that the material sufficiently burned (and extinguished) close to the skin surface to have caused sufficient heat on the skin. The burn cream protects the skin and provides a substrate to stabilize the moxa cone. Shiunko cream¹⁰ or lip balm¹¹ have both been used successfully as burn cream. All of the 25 insect bite wheals were treated with direct cone moxibustion with shiunko cream. These points would be considered ASHI points⁸. No known acupoints were treated and no needling was conducted. This treatment was a primary moxibustion treatment.

At the conclusion of the treatment which lasted approximately 30 minutes, the patient indicated that the bites were no longer itchy and was pleased with the effect. It was elected to do follow up visits. The patient was seen for follow up on day 2, 7, 14, and 30.

On day 2 the patient reported that the itch was gone and the need to scratch the lesions was eliminated. Now there was no urge to scratch and he could actually touch the bite lesions and not feel any need to scratch. On inspection of the lesions, 20 out of 25 bites had clear fluid blisters. The author concluded that the bites had originally collected dampness and congestion and the heat of the moxa burning brought yang energy to the skin and resulted in the yin fluid being brought to the surface. Only observation was conducted on day 2 and no further moxibustion was done.



Figure 1. This picture to the left taken on day 2 shows the flea bite lesion after treatment. The redness on the lesion is reduced while the fluid has formed a blister on the skin surface. The dimensions of the blister are approximately 3 mm by 5 mm in width and length respectively, and a raised height of approximately 2 to 3 mm. After a week, the blister flattened and dried to form a scab which eventually fell off after two more weeks. Redness beneath the fallen scab gradually faded.

Blisters on the skin are a result of an irritation. Blisters form physiological protection allowing the underlying skin to rebuild. The blister should remain intact during the process of new skin formation. Blisters should not be broken if possible ¹².

On day 7 the patient reported no itching and all but 2 of the blisters had broken by themselves and clear fluid had released. All he had done was wash the lesions with soap and water while showering. There was no sign of swelling or infection and the bites were drying up and shrinking. In previous incidences with flea bites at this stage his history was a great deal of itching which brought on uncontrolled scratching. He was very pleased with the effect of the treatment. He was asked to rate the difference. His response was "If the previous itch and scratch response by day 7 was estimated at 7 of 10, the result after moxa was 1 of 10." He gave the result a "1" only because of the fact that the lesions were still healing though not itchy.

On day 14 the patient reported no itching and all of the lesions were shrinking more, even the non-blistering ones. They were still dark red and were noticeable but since they were covered with clothing there was no cosmetic issue. Due to the dark red appearance of the healing lesions pre-treatment discussion and consideration should be given for this cosmetic appearance. Treated bites on face, hands, or on cosmetic conscious individuals could present with an unfavorable post treatment appearance. Scarring from moxibustion treatment is also a risk on any skin surface. It is imperative that this issue be discussed completely and carefully.

Evaluation at 30 days indicated that the itching had been eliminated from day 1. This indicated that the treatment had successfully eliminated 4 weeks of itching and scratching on all of the lesions based on historical comparison. Two of the 25 locations on the leg skin still showed small darkened spots that the patient said were still fading.

Conclusion

A review of the literature revealed that treatment of insect bites with moxibustion could assist healing. No references of the use of moxibustion to control itching caused by flea bites was found. In this case direct moxibustion treatment showed quick relief of itching due to flea bites. The side effect of blister formation did not result in skin infection and red marks of healing lesions were not an issue. A prospective randomized controlled study would be required to consider the effect of direct moxibustion

on flea bites to be causal. More study of the treatment of insect bites should be conducted to determine if co morbidities are affected.

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About the author

Dr Thomas Gormley is a graduate of Rutgers Dental School, New Jersey Institute of Technology, and The Eastern School of Acupuncture and Traditional Medicine. He maintains a private practice in Belleville, New Jersey, and is an assistant clinical professor and attending for St Joseph's Regional Medical Center in Paterson, New Jersey and New York Medical College. He integrates western medicine, nutrition, and Asian medicine for dental and medical diseases. He can be contacted at gormleydmd@aol.com. Dr Gormley receives no financial benefit related to this article.

Interview with Dr Thomas Corbin on German Auricular Acupuncture

Conducted by EJCAM editor, Dr Thomas Gormley

It is our distinct honor to be able to present a dialogue with Dr Tom Corbin. Dr Corbin is an integrator of both western and eastern medicine. He teaches a 4-part course in German Auriculoacupuncture, GA, which is where your editor met him. His teaching was greatly appreciated by his students as he brought eastern and western medicine together and provided scientific evidence to support GA. His information is innovative and he presented it in a well organized and impactful manner. This dialogue presentation will hopefully provide information about Dr Corbin's work in healthcare that is genuinely worth sharing.

Dr Corbin, thank you for agreeing to do this interview. The intention of this interview is to help people learn about your work in auriculoacupuncture, specifically bringing GA to the US. Questions were prepared by the EJCAM editor and one question was submitted by an attendee as noted.

1. How did you become interested in auriculoacupuncture?

It was available at Jiangsu Provincial Hospital while I was taking the W.H.O. Collaborative Training Program in Nanjing University of Traditional Chinese Medicine. I saw a greater alleviation of symptoms in more serious pathologies as well as an immediate impact on the treatment undertaken.

2. Is there an advantage to using auriculoacupuncture over body acupuncture?

I would say that there are the initial advantages of treating areas in the microsystem that don't depend on tongue, pulse and a keen understanding of channel pathology or points on the tendino-muscular channels but the biggest advantage is immediate feedback from an objective standpoint.

3. You mentioned a specific device that helped establish the relationship of the ear to the brain and body, the functional MRI. What did this prove to you?

Nothing, fMRI only showed what we (auricular medicine practitioners) had been saying for years. The ear is more than just vagal nerve stimulation or gastro-intestinal influence. There are areas of the ear that correspond to parts of the body and taking the Galvanic skin response reading equates with pathology in that body part.

4. We know you have been influenced by many practitioners of auriculotherapy but you decided to work mostly with German doctors. What helped you decide this?

The German Dr's were absolutely sure that no matter the problem they could help. It wasn't bragging it was a sureness based on experience. I'd seen it before in many arenas and I recognize proficiency in a chosen field.

5. Do you think that acupuncturists have advantages using GA over other health care providers?

I believe with study, acupuncturists are perfectly suited to learn the German system. The study part has to be an understanding of the nervous system in western medicine. However, with the palpatory skills most acupuncturists gain, they overcome a traditional sticking point for many trying to learn auricular medicine, the Vascular Autonomic Signal.

6. Tell us about how and where you practice GA.

I use German acupuncture as I would another tool in my belt of tools. It's not for every patient, however, it is incredibly effective in patients that have a hard time gaining any positive relief or healing in chronic problems.

7. How did you become involved in research here in the US?

Upon my return after studies in P.R. China, I was asked to come to the University of Miami Department of CAM as they weren't able to find an acupuncturist that was cognizant of how to conduct research and work in a team approach to do research with different disciplines. It was exactly how we worked in China.

8. Hospitals in the US are beginning to see the benefits of acupuncture for reducing pain in the emergency department, ED. Do you think GA has an advantage over other forms of acupuncture especially in the ED?

I think auricular has definitely proven its worth in clinical situations where it is fast, effective, and requires very little clinical space. It also is noteworthy due to its decreased cost to the health system.

9. How about rehab use of GA for chronic recovery? Does GA have advantages in that area?

I believe that German Auricular if intended could have distinct advantages in recovery but as the Germans did not intend for it to be used in this arena I can't say for sure. I do have faith in their logic in creating their interventions.

10. Is research continuing to back up your thinking about GA in acute and chronic medicine?

Research has opened my eyes even wider than initially thought as the more I learn about the vagus nerve the more areas I see where auricular therapy could be used to attack growing public health problems.

11. Do you have a vision of acupuncture becoming mainstream in healthcare in the US as it is in China where acupuncturists have equal status as doctors practicing western medicine there?

No, I'm way too old to entertain that daydream. The Pharmaceutical Industry has its heel on the throat of western medicine and until it releases all I can hope for is a space to work. However, in Public Health, I have high hopes for higher status.

12. Ting M Chiao asked, "can you treat incontinence and insomnia with auriculotherapy, and how would you do it?"

I don't do cookbook therapy but I'd be happy to address this on a real patient that I can touch. It's the same as asking what formula would you use. Without tongue and pulse and patient query, its nothing but an exercise with no outcome.

13. Can you make a summary statement of the importance of GA and how you are spreading this information?

I believe that the system has shown itself to be an effective adjunct in many cases to helping people in my profession to expand their paradigm and find the value of a true complementary therapy. For those of us who religiously practice the therapy, it defines us and is the cornerstone of our medical diagnosis and treatments allowing us to logically objectively take on difficult cases safely. Thank you.

Dr Corbin, thank you for taking your time to share this with our readers and our hope is that information of your work and teaching will spread.

Dr Corbin can be reached at the University of Miami Medical School Complementary Medicine Department where he teaches and does research. He is a Licensed Acupuncturist and Ph.D. who specializes in auricular acupuncture with emphasis in German style. He has a long history of treating patients in the Veterans Administration Medical Care System with chronic pain. He was trained in acupuncture at Nanjing PR China. Dr. Corbin has researched and specialized in the use of auricular medicine for pain and addictions and is a registered trainer for the National Acupuncture Detox Association. He has made his life's work treating patients suffering with pain and researching better ways to relieve pain.

HOW NOT TO DIE: The Role of Diet in Preventing, Arresting, & Reversing Our Top 15 Killers (Transcript of Dr Michael Greger's presentation at International Conference on Nutrition in Medicine 2017)

By Michael Greger M.D. FACLM (Transcript forwarded by Katie Schloer, Executive Director of NutritionFacts.org)

"Allow me to begin on a personal note. This is a picture of me, right around the time that my grandma was diagnosed with end-stage heart disease and sent home to die. She had already had so many bypass operations, basically ran out of plumbing at some point, confined to a wheelchair, and there was nothing more they could do. Her life was over at age 65. But then, she heard about this guy, Nathan Pritikin, one of our early lifestyle medicine pioneers.

And what happened next is chronicled in Pritikin's biography. My grandma was one of the "death's door" people. Frances Greger arrived in a wheelchair. "Mrs. Greger had heart disease, angina, and claudication; her condition was so bad she could no longer walk without great pain in her chest and legs. Within three weeks, though she was not only out of her wheelchair but was walking ten miles a day."

This is my grandma at her grandson's wedding 15 years after she was given her medical death sentence, and thanks to a healthy diet, she was able to live another 31 years on this earth—until 96—to enjoy her six grandkids, including me.

That is why I went into medicine.

When Dr. Ornish published his Lifestyle Heart Trial years later, proving with quantitative angiography that coronary artery disease could indeed be reversed in the majority of patients without drugs or surgery—just a plant-based diet and other healthy lifestyle changes, I assumed that it was going to be a game-changer. My family had seen it with their own eyes, but finally here it was in black and white, published in one of the world's most prestigious medical journals on the planet. But, nothing happened—leaving me to wonder if, effectively, the cure to our #1 killer could get lost down some rabbit hole and ignored, then, what else might be in the medical literature that can help my patients? I made it my life's mission to find out.

For those of you unfamiliar with my work, every year I read through every issue of every English-language nutrition journal in the world—so busy folks like you don't have to.

I then compile all the most interesting, the most groundbreaking, the most practical findings to create new videos and articles every day to my nonprofit site, NutritionFacts.org.

Everything on the website is free. There are no ads, no corporate sponsorships. It's strictly noncommercial, not selling anything. I just put it up as a public service, as a labor of love.

New videos and articles every day, on the latest in evidence-based nutrition. What a concept!

Where did Pritikin get his evidence from? A network of missionary hospitals set up by Western doctors throughout sub-Saharan Africa uncovered what may be one of the most important advances in health, according to one of our most famous medical figures of the 20th century, Dr. Denis Burkitt: the fact that

many of the most common and major diseases “in modern Western culture are universally rare in third world communities.”

Like, heart disease. This landmark article from the 50s started out with a shocking statement: “In the African population of Uganda, coronary heart disease is almost non-existent.” Wait a second, our #1 cause of death, almost nonexistent? What were they eating?

They were eating a lot of starchy vegetables, starchy grains, and greens, and their protein almost exclusively from plant sources, and they had the cholesterol levels to prove it. Actually, very similar to those eating modern-day, plant-based diets.

Maybe the Africans were just dying early from some other kind of diseases—and so, never lived long enough to have a heart attack? No, here are age-matched heart attack rates in Uganda versus St. Louis. Out of 632 autopsies in Uganda, only one myocardial infarction. Out of 632 age- and gender-matched autopsies in Missouri, 136 myocardial infarctions: more than 100 times the rate of our #1 killer.

In fact, they were so blown away they went back and did another 800 autopsies in Uganda, and still, just that one small healed infarct (meaning it wasn’t even the cause of death) out of 1,427 patients—less than one in a thousand; whereas here, heart disease is an epidemic.

This is a list of diseases commonly found in the U.S. (and in populations that eat and live like the U.S.), but are rare or even nonexistent in populations centering their diets around whole plant foods.

These are among our most common diseases, like obesity, for example, or hiatal hernia, one of the most common stomach problems. Varicose veins and hemorrhoids—two of the most common venous problems; colorectal cancer—a leading cause of cancer-related death; diverticulitis—the #1 disease of the intestines; appendicitis—the #1 cause of emergency abdominal surgery; gallbladder disease—the #1 cause of nonemergency abdominal surgery; as well as ischemic heart disease—the commonest cause of death here, but a rarity among plant-based populations.

This suggests heart disease may be a choice. Like cavities. If you look at the teeth of people who lived over 10,000 years before the invention of the toothbrush, they pretty much had no cavities. Didn’t brush a day in their lives; no flossing; yet, no cavities. That’s because candy bars hadn’t been invented yet.

Why do people continue to get cavities when we know they’re preventable through diet? Simple. Because the pleasure people derive from dessert may outweigh the cost and discomfort of the dentist’s chair for many people. And, that’s fine!

Look, as long as people understand the consequences of their actions, as a physician, what more can I do? If you’re an adult, and decide the benefits outweigh the risks for you and your family, then, go for it—I certainly enjoy the occasional indulgence (I’ve got a good dental plan).

But, what if instead of the plaque on our teeth, we’re talking about the plaque building up inside of our arteries? This is another disease that can be prevented by changing our diet.

Now, what are the consequences for you and your family? Now, we’re not talking about scraping tartar anymore. Now, we’re talking life and death. The most likely reason that most of our loved ones will die is because of heart disease. It’s still up to each of us to make our own decisions as to what to eat and

how to live—but we should make these choices consciously, educating ourselves about the predictable consequences of our actions.

Coronary heart disease; atherosclerosis; hardening of the arteries, begins in childhood.

By age 10, the arteries of nearly all kids raised on the standard American diet already have fatty streaks—the first stage of the disease.

Then, these plaques start forming in our 20s, get worse in our 30s, and then, can start killing us off. In our hearts, it's called a heart attack; in our brains, the same disease is called a stroke.

If there is anyone in this audience older than age 10, then the question isn't whether or not to eat healthy to prevent heart disease; it's whether you want to reverse the heart disease that you already have.

Is that even possible? When researchers took people with heart disease and put them on the kind of plant-based diet followed by those populations that didn't suffer from heart disease, their hope was to slow the disease process down—maybe even stop it. But instead, something miraculous happened.

The disease started to reverse, to get better. As soon as patients stopped eating an artery-clogging diet, their arteries started opening up. Their bodies were able to start dissolving some of the plaque away. Even in some cases of severe triple vessel heart disease, arteries opened up without drugs, without surgery—suggesting their bodies wanted to heal all along, but were just never given the chance. This improvement in blood flow to the heart is after just three weeks of eating healthy.

Let me share with you the best-kept secret in medicine. The best-kept secret in medicine is that sometimes, given the right conditions, our body can heal itself.

If you whack your shin really hard on a coffee table, it can get all red, hot, swollen, and inflamed, but will heal naturally if we just stand back and let our body work its magic. But what if we kept whacking it in the same place three times a day (breakfast, lunch, and dinner) every day? It'd never heal.

You'd go to your doctor and say, "My shin hurts." And the doctor would be like, no problem, whip out their pad, and write you a prescription for painkillers. You're still whacking your shin three times a day, but it feels so much better with the pain pills on board. Thank heavens for modern medicine.

It's like when taking nitroglycerine for crushing chest pain. Tremendous relief, but you're not actually treating the underlying cause of the disease.

Our body wants to come back to health, if we let it. But if we keep re-injuring it three times a day, we may never heal.

It's like smoking. One of the most amazing things I learned in medical school was that within about 15 years of stopping smoking, our lung cancer risk approaches that of a lifelong nonsmoker. Isn't that amazing? Our lungs can clear out all that tar, and eventually, it's almost as if we never started smoking at all.

Every morning of our smoking life, that healing process started until, wham, our first cigarette of the day, re-injuring our lungs with every puff. Just like we can re-injure our arteries with every bite, when all

we had to do all along—the miracle cure, was to just stand back, get out of the way, stop re-damaging ourselves, and let our bodies' natural healing processes bring us back towards health.

Sure, you could choose moderation, and hit yourself with a smaller hammer. But why beat yourself up at all?

The human body is a self-healing machine.

We've known about this for decades. American Heart Journal, 1977: cases like Mr. F.W. here; such severe angina he couldn't even make it to the mailbox, but then started eating healthier, and a few months later, he was climbing mountains, no pain.

There are some fancy new anti-angina drugs on the market now that cost thousands of dollars a year. But at the highest dose, they can successfully prolong exercise duration, extending the time someone can walk on a treadmill as long as 33 1/2 seconds.

It does not look like those choosing the drug route will be climbing mountains anytime soon.

You see, plant-based diets aren't just safer and cheaper, but they can work better.

Killer #2 is cancer. What happens if we put cancer on a plant-based diet? Dean Ornish and colleagues found that the progression of prostate cancer could be reversed with a plant-based diet and other healthy lifestyle behaviors—and no wonder.

If you drip the blood of those eating the standard American diet onto cancer cells growing in a petri dish, cancer growth is cut down by about 9%. But put people on a plant-based diet for a year, though, and their blood can do this. The blood circulating within the bodies of those eating plant-based diets has nearly eight times the stopping power when it comes to cancer cell growth.

Now, this was for prostate cancer—the leading cancer killer specific to men. In women, it's breast cancer. So, researchers tried duplicating the study with women, using breast cancer cells instead. They didn't want to wait a whole year to get the results, though. So, they figured they'd see what a healthy diet could do in just two weeks, against three different types of human breast cancer cells.

This was the before: cancer growth powering away at 100%. And then, after eating a plant-based diet for 14 days.

Here's the before picture: a layer of breast cancer cells is laid down in a petri dish, and then blood from women eating the standard American diet is dripped on them. And as you can see, even people eating crappy diets have some ability to break down cancer. But after just two weeks eating healthy, blood was drawn from those same women—so, they acted as their own controls—dripped on another carpet of breast cancer cells, and this is what they were left with; just a few individual cancer cells left. Their bodies just cleaned up.

Before, and after; just two weeks eating healthy. Their blood became that much more hostile to cancer.

Slowing down the growth of cancer cells is nice, but getting rid of them is even better. This is what's called apoptosis, programmed cell death. After eating healthy, their own bodies were able to reprogram the cancer cells, forcing them into early retirement.

This is what's called TUNEL imaging, measuring DNA fragmentation or cell death. Dying cells show up as white spots. So, again, this is the before—what the blood of the average woman eating a standard American diet can do to breast cancer cells. Her blood may be able to kill off a few. But then, after 14 days of healthy plant-based living, her blood can do this. It's like she's an entirely different person inside.

The same blood that was now coursing through these women's bodies gained the power to significantly slow down and stop breast cancer cell growth, within just two weeks of eating a plant-based diet.

What kind of blood do we want in our body; what kind of immune system? Do we want blood that just kind of rolls over when new cancer cells pop up, or do we want blood circulating to every nook and cranny of our body with the power to slow down and stop them?

Now, this dramatic strengthening of cancer defenses was after 14 days of a plant-based diet and exercise; they had these women out walking 30 to 60 minutes a day. Well, wait a second, if you do two things, how do you know what role the diet played? So, the researchers decided to put it to the test.

This is measuring cancer cell clearance. This is what we saw before; the effect of blood taken from those who ate a plant-based diet—in this case for an average of 14 years—along with mild exercise, like just walking every day. Plant-based diet and walking—that's the kind of cancer cell clearance you get. Compare that to the cancer-stopping power of your average sedentary meat-eater, which is basically nonexistent.

This middle group is interesting, though. Instead of 14 years on a plant-based diet, ate 14 years of a standard American diet—but, had 14 years of daily, strenuous, hour-long exercise, like calisthenics.

The researchers wanted to know if you exercise long enough, if you exercise hard enough, can you rival some strolling plant-eaters?

And the answer is, exercise helped—no question, but literally 5,000 hours in the gym was no match for a plant-based diet.

Same thing as before. Even if you are a couch potato eating fried potatoes, your body's not totally defenseless. Your bloodstream can kill off a few cancer cells. But here's the hard core strenuous exercise group, killing off cancer cells left and right. But nothing appears to kick more cancer tush than a plant-based diet.

We think it's because of the animal proteins—meat, egg white, and dairy proteins—increasing the level of IGF-1 in our bodies. Insulin-like growth factor-1, a cancer-promoting growth hormone involved in the acquisition and progression of malignant tumors.

But if we lower animal protein intake, if you put people on a plant-based diet, their IGF-1 levels go down, and if you put people on a plant-based diet for years, their levels drop even further.

And their IGF-1 binding protein levels go up. That's one way our body tries to protect itself from cancer—from excessive growth—by releasing a binding protein into our bloodstream to tie up any excess IGF-1. It's like our body's emergency brake. Yes, in as little as two weeks, a plant-based diet can bring down your liver's production of IGF-1. But what about all the IGF-1 circulating in your bloodstream from the bacon and eggs you had three weeks before? So, your liver releases a snatch squad of binding

proteins to take it out of circulation. And, as you can see, it just gets better and better, the longer you eat healthy.

Here's the experiment that nailed IGF-1 as the villain; same as last time. Go on a plant-based diet, cancer cell growth drops, and cancer cell death shoots up. But then, here's the kicker: what if you added back to the cancer the exact same amount of IGF-1 banished from your system just because you were eating healthy for two weeks? It erases the diet and exercise effect. It's like you never started eating healthy at all.

So, the reason the largest prospective study on diet and cancer ever found that the incidence of all cancers combined was lower among vegetarians than among meat-eaters may be because they eat less animal protein. So, they end up with less IGF-1, which can mean less cancer growth.

How much less cancer are we talking about? Middle-aged men and women with high protein intakes had a 75% increase in total mortality, and a four-fold increase in the risk of dying from cancer. But not all proteins; specifically animal protein, which makes sense, of course, given the higher IGF-1 levels.

The academic institution sent out a press release with a memorable opening line: "That chicken wing you're eating could be as deadly as a cigarette," explaining that eating a diet rich in animal proteins during middle age makes you four times more likely to die of cancer—"a mortality risk factor comparable to smoking."

What was the response to the revelation that diets high in meat, eggs, and dairy could be as harmful to health as smoking? One nutrition scientist replied that it was potentially dangerous to compare the effects of smoking with the effect of meat and cheese. Why? Because a smoker might think, "Why bother quitting smoking if my ham and cheese sandwich is just as bad for me?" So, better not to tell anyone about the whole meat and dairy thing.

That reminds me of a famous Philip Morris cigarette ad that tried to downplay the risks by saying, "You think secondhand smoke is bad, increasing the risk of lung cancer 19%? Drinking 1 or 2 glasses of milk every day may be three times as bad—62% increased risk of lung cancer." Or doubling the risk by frequently cooking with oil, or tripling your risk of heart disease by eating non-vegetarian, or multiplying your risk six-fold by eating lots of meat and dairy. So, they conclude, "Let's keep a sense of perspective here." The risk of lung cancer from secondhand smoke may be "well below the risk reported for other everyday activities." So, breathe deep.

That's like saying: "Don't worry about getting stabbed, because getting shot is so much worse."

Uh, how about neither? Two risks don't make a right.

You'll note Philip Morris stopped throwing dairy under the bus when they purchased Kraft Foods.

Okay, what about the other 13 leading causes of death?

The top three killers used to be heart disease, cancer, and stroke. Oh, that is so 2007. Now, it's heart disease, cancer, and COPD—chronic obstructive pulmonary diseases, like emphysema. Thankfully, COPD can be prevented with the help of a plant-based diet, and even treated with plants; improving lung function over time.

Of course, the tobacco industry viewed these landmark findings a little differently. Instead of adding plants to one's diet to help one's lung function, wouldn't it be simpler to just add them to the cigarettes? And indeed, the addition of açai berries to cigarettes evidently has a protective effect against emphysema in smoking mice. Who would have thunk it?

Next, they're going to be putting berries in meat. And indeed, I couldn't make this stuff up. The addition of fruit extracts to burgers was not without its glitches, though. The blackberries "literally dyed burger patties with a distinct purplish colour"—though, evidently, infusing lamb carcasses with kiwifruit juice before rigor mortis sets in does evidently improve tenderness. And, it's even possible to improve the nutritional profile of frankfurters with powdered grape seeds, though, there were complaints that the grape seed particles were visible in the final product. And if there's one thing we know about hot dog-eaters, it's that they're picky about what goes in their food.

Pig anus? Okay, but grape seeds? Eww!

Strokes are killer #4. Preventing strokes may be all about eating potassium-rich foods, yet most Americans don't even reach the recommended minimum daily intake. And by most, I mean more than 98%. 98% of us eat potassium-deficient diets, because 98% of us don't eat enough plants.

Potassium comes from the words pot ash. You take any plant, put it in a pot, and reduce it to ash, and you're left with pot-ash-ium, so-called vegetable alkali. True story, but can anyone name me a plant food particularly high in potassium?

Bananas, right? I don't know why that's like the one thing everyone knows about nutrition. Chiquita must have had a great PR firm or something. But it turns out that bananas don't even make the top 50 sources, coming in at number 86, right behind fast food vanilla milk shakes. It goes fast food vanilla milk shakes, then bananas.

In fact, when I was researching for my new book, I found out that the USDA expanded their list, and now bananas don't even make the top thousand sources; coming in at number 1,611, right after Reese's Pieces. I kid you not. The most concentrated whole food sources of potassium in the diet are: beans, and greens, and dates.

Bananas don't make it to a thousand—in fact, if you look at the next leading cause of death (unintentional injuries), bananas could be downright dangerous.

Alzheimer's disease is now our sixth leading killer, now striking a staggering four million Americans affected. Twenty years ago, it wasn't even in the top ten. According to the latest dietary guidelines for the prevention of Alzheimer's, the two most important things we can do: cut down our consumption of meat, dairy, and junk; and replace those with vegetables, beans, fruits, and whole grains.

This is based, in part, on data going back over 20 years now. Those who eat meat—red meat or white meat, it doesn't matter—appear between two to three times more likely to become demented later in life, compared to those that don't eat meat. And the longer one eats meat-free, the lower the risk of dementia drops.

Next on the list: type 2 diabetes, which we can prevent, arrest, and reverse with a plant-based diet—something we've known since back in the 1930s. Within five years, about a quarter of the diabetics were able to get off insulin.

But plant-based diets are low-calorie diets. Maybe their diabetes just got better because they lost so much weight? To tease that out, what we would need is a study where researchers switch people to a healthy diet, but force them to eat so much food that they wouldn't lose any weight, despite eating healthier. Then, we could see if plant-based diet had unique benefits beyond all the weight loss. We'd have to wait 44 years, but here it is: subjects were weighed every day, and if they started losing weight, they were made to eat more food. In fact, so much food, some of the participants had problems eating it all—like “not another tostada, not another salad.” But they eventually adapted; so, there was no significant alteration in body weight, despite restricting meat, dairy, eggs, and junk.

So, with zero weight loss, did a plant-based diet still help? Overall, insulin requirements were cut about 60%, and half were able to get off insulin altogether despite no change in weight. How many years did this take? No, 16 days.

So, we're talking diabetics who've had diabetes for as long as 20 years, injecting 20 units of insulin a day. And then, as few as 13 days later, they're off of all insulin altogether, thanks to less than two weeks on a plant-based diet—even with zero weight loss. Diabetes for 20 years, then off all insulin in two weeks. Diabetes for 20 years, because no one had told them about a plant-based diet. Here's patient 15; 32 units of insulin on the control diet, and then, 18 days later, on none. Lower blood sugars on 32 units less insulin. That's the power of plants. This was without weight loss; his body just started working that much better.

And as a bonus, their cholesterol dropped like a rock to under 150, in just 16 days. Just like moderate changes in diet usually result in only modest reductions in cholesterol, how moderate do you want your diabetes?

Everything in moderation may be a truer statement than many people realize. Moderate changes in diet can leave diabetics with moderate vision loss, moderate kidney failure, and moderate amputations—maybe just a few toes or something? Moderation in all things is not necessarily a good thing.

That study that purported to show that diets high in meat, eggs, and dairy could be as harmful to health as smoking supposedly suggested that people who eat lots of animal protein are four times as likely to die from cancer or diabetes. But if you look at the actual study, you'll see that's not true. Those eating lots of animal protein didn't have just four times more risk of dying from diabetes; they had 73 times higher risk of dying from diabetes.

Those who chose moderation—eating a moderate amount of animal protein—only had 23 times the risk of death from diabetes.

Killer #8 is kidney failure, which may be both prevented and treated with a plant-based diet. And no surprise; kidneys are highly vascular organs. Harvard researchers found three dietary risk factors for declining kidney function: animal protein, animal fat, and cholesterol. Animal fat can alter the actual structure of our kidneys, based on studies like this, showing plugs of fat literally clogging up the works in autopsied kidneys.

And the animal protein can have a profound effect on normal kidney function, inducing what's called hyperfiltration; increasing the workload on the kidney, but not plant protein. Eat some tuna fish, and you can see increased pressure on the kidneys one, two, and three hours after the meal; shoots right up. If, instead of having a tuna salad sandwich, though, you had a tofu salad sandwich with the same amount of protein, no effect. Kidneys can deal with plant protein without even batting an eyelash.

Why does animal protein cause the overload reaction, but not plant protein? It appears to be due to inflammation triggered by the animal protein. We know this because if you give a powerful anti-inflammatory drug along with the tuna fish, you can actually abolish that hyperfiltration effect, that protein leakage effect in response to meat ingestion.

Then, there's the acid load. Animal protein induces the formation of acid within the kidney, which may lead to tubular toxicity: damage to the delicate urine-making tubes within the kidney. Animal foods tend to be acid-forming, whereas plant foods tend to either be relatively neutral or actually alkaline, base-forming, to counteract some of that acid. So, the solution to halting the progression of chronic kidney disease might lie in the produce aisle rather than the pharmacy aisle.

No wonder plant-based diets have been used to treat kidney disease for decades. Here's protein leakage on the low-sodium diet that physicians would conventionally put these patients on; switched to a supplemented vegan diet; conventional; plant-based; conventional; plant-based—turning kidney dysfunction on and off like a light switch, based on what's going into their mouths.

Killer #9 is respiratory infections. What possible role could diet play? You obviously haven't seen my video Kale and the Immune System, talking about the immunostimulatory effects of kale. Is there anything kale cannot do?

Boosting antibody production seven-fold; but that's in a petri dish. What about in people? Older men and women were split into two groups right before they were going to get their Pneumovax vaccination (their pneumonia vaccination). Half continued to eat as they always had. The other half added just a few servings of fruits and vegetables to their daily diet, and after getting their injection, you can see a significant improvement in the protective antibody immune response from that one simple change. That wasn't cutting out meat; just adding fruits and vegetables can significantly improve immune function.

Killer #10 is suicide. We've known those eating healthier have healthier mood states—in fact, only about half the depression, anxiety, and stress scores compared to those that eat meat. Researchers suspect it's the arachidonic acid, this inflammatory long chain omega-6 fatty acid found predominantly in chicken and eggs. That's where it's predominantly found in the American diet. But you can't tell if it's cause and effect, until you put it to the test.

They took people eating the standard American diet, and removed meat, fish, poultry, and eggs from their diets, and got a significant improvement in mood scores within just two weeks. Thanks, perhaps, to the removal of arachidonic acid from their bodies, which they thought may be adversely impacting mental health via a cascade of neuroinflammation; brain inflammation, but we could bring that down within a matter of weeks after cutting eggs, chicken, and other meat.

Now, am I just cherry picking, though? What about all the randomized controlled trials like that, showing that other diets have improved mood? There aren't any. A recent review concluded that only the plant-based study fit the bill. It's hard to cherry pick when there's only one cherry.

Works in a workplace setting too: significant increases in physical functioning, general health, vitality, and mental health—not surprisingly, translating into improved work productivity. The biggest such study, across 15 corporate sites at Geico, found that plant-based diets resulted in significant reported improvements in depression, anxiety, stress, fatigue, and emotional well-being. So, lifestyle interventions, such as exercise, can help mental as well as physical health. And among the most effective of these is the use of plant-based diets.

Killer #11 is blood infections. Sure, foodborne bacteria can kind of burrow through the bloodstream and directly invade through the intestinal wall—but in women, may creep up into their bladder.

We've known for decades that it's bacteria creeping up from the rectum that cause bladder infections. But only recently did we figure out where that rectal reservoir of bladder-infecting *E. coli* was coming from: chicken. We now have DNA fingerprinting proof of a direct link between farm animals, meat, and bladder infections—solid evidence that urinary tract infections can be a zoonosis, bladder infections as an animal-to-human disease.

Wait a second. Can't I just use a meat thermometer and cook the meat through? No, because of cross-contamination. We've known for decades that if you give someone a frozen chicken to prepare and cook in their own kitchen as they normally would, a multitude of antibiotic-resistant *E. coli* jump from the chicken into the gut of the volunteer —before they even eat it! So, you could incinerate it to ash; you don't even have to eat any of it. And it still wouldn't matter, because you already infected yourself just handling it.

Within days, the drug-resistant chicken bacteria had multiplied to the point of becoming a major part of the person's gut flora. The chicken bacteria were like taking over their intestines.

Even if you follow all the safe handling guidelines, rinsing everything with bleach—even spraying bleach on for good measure, there still may be pathogenic fecal bacteria left behind. No one actually does this, but what if you did this, and then came in later and swabbed kitchen surfaces? Researchers found pathogenic fecal bacteria: salmonella, campylobacter—both serious human pathogens, still left behind in the kitchen. The reason that most people have more bacteria from feces in their kitchen sink than on their toilet seat is because most people rinse chickens in the sink, not the toilet. So, unless our kitchen is like some biohazard lab, the only way to guarantee we're not going to leave infection around the kitchen is to not bring it into our homes in the first place.

The good news is that it's not like you eat chicken once, and you're colonized for life. In this study, the chicken bacteria only seemed to last about ten days before our good bacteria were able to muscle them out of the way. The problem is that most families eat chicken more than once every ten days; so, they may be constantly reintroducing these chicken bugs into their systems.

But wait a second. You can't sell unsafe cars; you can't sell unsafe toys; how is it legal to sell unsafe meat?

They do it by blaming the consumer. As one USDA poultry microbiologist said: “Raw meats are not idiot-proof. They can be mishandled and when they are, it’s like handling a hand grenade. If you pull the pin, somebody’s going to get hurt.” See, if we get sick, it’s our fault.

While some may question the wisdom of selling hand grenades in supermarkets, the USDA poultry expert disagrees. “I think the consumer has the most responsibility but refuses to accept it.” That’s like a car company saying yeah, we installed faulty brakes, but it’s your fault for not putting your kid in a seatbelt.

The head of the CDC’s food poisoning division responded famously to this kind of blame-the-victim attitude coming from the meat industry. “Is it reasonable that if a consumer undercooks a hamburger, their three-year-old dies?” Is that reasonable?

Not to worry, though: the meat industry is on it. They got the FDA approval for a bacteria-eating virus to spray on the meat. Now, the industry is concerned that consumer acceptance of bacteria-eating viruses may present something of a challenge to the food industry. But if they think that’s going to be a challenge, check out their other bright idea.

The “Effect of Extracted Housefly Pupae Peptide Mixture on Chilled Pork Preservation”—this is a science-y way of saying they want to smear a maggot mixture on meat.

Now wait—it’s a low-cost and simple method. Think about it; maggots thrive on rotting meat. However, there have been no reports that maggots have any serious diseases; so, they must be packed with some sort of antibacterial something. Have you ever seen a maggot sneeze? I didn’t think so.

So, they took maggots at three days old, washed them, toweled them off, a little Vitamix action, and voilà! Safer meat.

We did kidney failure; what about liver failure? We’ve known for decades that a plant-based diet could be used to treat liver failure, significantly reducing the toxins that would otherwise build up eating meat, without a fully functional liver to detoxify your blood.

I do have to admit, though, that some people on plant-based diets have worsening liver function. They’re called alcoholics. Living on potatoes, corn, grapes, and barley—in fact, strictly plant-based, yet still not doing so hot.

High blood pressure is next, affecting nearly 78 million Americans. That’s one in three of us. And as we age, our pressures get higher and higher, such that by age 60, it strikes more than half.

Wait a second. If it affects most of us when we get older, maybe it’s less a disease, and more just an inevitable consequence of aging? No. We’ve known since the 1920s that high blood pressure need not occur.

Researchers measured the blood pressures of a thousand people in rural Kenya who ate a diet centered around whole plant foods. Starchy vegetables, whole grains, beans, vegetables, fruit, and dark green leafies. Our pressures go up as we age; their pressures actually go down.

And, the lower the better. The whole 140 over 90 cut-off is arbitrary. Even people who start out with blood pressure under 120 over 80 appear to benefit from blood pressure reduction. So, the ideal blood

pressure, the no-benefit-from-reducing-it-further blood pressure, is actually 110 over 70. But is it even possible to get blood pressures down to 110 over 70? It's not just possible; it's normal—for those eating healthy enough diets.

Over two years at a rural Kenyan hospital, 1,800 patients were admitted. How many cases of high blood pressure did they find? Zero. Wow! So, they must have had low rates of heart disease. No, they had no rates of heart disease. Not a single case of arteriosclerosis, our #1 killer, was found.

Rural China too; about 110 over 70 their entire lives. 70-year-olds had the same average blood pressure as 16-year-olds. Now, of course, Africa and China have vastly different diets, but they share this common theme, that they are plant-based day-to-day, with meat only eaten on special occasions.

Why do we think it's the plant-based nature of their diets that was so protective? Because in the Western world, as the American Heart Association has pointed out, the only folks really getting down that low are those eating strictly plant-based diets, coming in at an average of 110 over 65.

Based on the largest study of those eating plant-based diets to date—89,000 Californians—there appears to be a stepwise drop in blood pressure rates as people eat more and more plant-based.

Same thing with diabetes and obesity. The more and more healthy we eat, the better. Yes, you can wipe out most of your risk eating strictly plant-based, but it's not black and white, all or nothing. Any movement along the spectrum towards healthier eating can accrue significant benefits.

You can show this experimentally. You take vegetarians and give them meat, pay them enough to eat it, and their blood pressures go up. Or, you remove meat from their diet, and their blood pressures go down—in just seven days! And this is after the vast majority reduced or stopped their blood pressure medications completely. They had to reduce their medications because their pressures were getting so low that if they were on drugs, they could fall over and crack their heads open! Lower pressures on fewer drugs; that's the power of plants.

So, does the American Heart Association recommend a no-meat diet? No, they recommend a low-meat diet, the so-called DASH diet. Why not vegetarian? When the DASH diet was created, were they just not aware of this landmark research, done by Harvard's Frank Sacks? No, they were aware of the landmark research. The Chair of the Design Committee that came up with the DASH diet was Frank Sacks.

See, the DASH diet was explicitly designed with the #1 goal of capturing the blood pressure-lowering benefits of a vegetarian diet, yet contain enough animal products to make it palatable to the general public. They didn't think the public could handle the truth.

In their defense, you can see what they were thinking. Just like drugs never work unless you actually take them, diets never work unless you actually eat them. So, you can't tell people to eat plant-based—they won't do it. So, they figured they might help more on a population scale if they just soft-pedaled the truth to make it more acceptable. Alright, tell that to the thousand families a day that lose a loved one to high blood pressure. Maybe it's time to tell the American public the truth.

Killer #14 is Parkinson's disease. Does a plant-based diet reduce risk of Parkinson's disease? Well, most studies to date do suggest a link between dairy products and Parkinson's—but why?

Well, there's evidence that milk is contaminated with neurotoxic chemicals. High levels of pesticide residues are found in the milk supply, and in the brains of people who die from Parkinson's disease. And there are other pollutants, like tetrahydroisoquiniline, which is actually what scientists use to try to induce Parkinson's in primates—and which is found mostly in cheese. So, maybe the dairy industry should require toxin screenings of the milk supply. Good luck with that.

You could always just not drink it, but then, what would happen to your bones? That's a marketing ploy; if you look at the actual science, milk does not appear to protect against hip fracture risk, whether drinking during your adult years, or drinking milk during your teen years. If anything, milk consumption was associated with an increase in fracture risk. Maybe this is why hip fracture rates are highest in populations with the greatest milk consumption, where they drink the most milk. Swedish researchers decided to put it to the test.

100,000 men and women followed for up to 20 years, and milk-drinking women had higher rates of death, more heart disease, and significantly more cancer, for each daily glass of milk. Three glasses a day was associated with nearly twice the risk of premature death.

And they had significantly more bone and hip fractures, too. More milk, more fractures. Milk-drinking men also had higher rates of death. But for some reason, you never see milk ads like this [image of milk carton among gravestones].

Finally, aspiration pneumonia, which is caused by swallowing problems due to Parkinson's, or Alzheimer's, or a stroke—all of which we've already covered.

So, where does this leave us? These are the top fifteen reasons that Americans die, and a plant-based diet can help prevent nearly all of them; can help treat more than half of them; and, even, in some cases, even reverse the progression of disease, including our top three killers.

There are drugs that, in some circumstances, can help, too. You can take one drug to treat cholesterol every day for the rest of your life; another drug for blood sugars; a couple different pills for high blood pressure.

The same diet, though, does it all! It's not like there's a liver-healthy diet, and a heart-healthy diet and a different brain-healthy diet. No, a liver-healthy diet is a heart-healthy diet, is a brain-healthy diet. One diet to rule them all.

And what about drug side effects? I'm not talking a little rash or something. Prescription drugs kill more than 100,000 Americans every year.

Wait a second—106,000 deaths a year? That means that the sixth leading cause of death is actually doctors!

The sixth leading cause of death... is me! Thankfully, I can be prevented with a plant-based diet.

Seriously, though, compared to 15,000 American vegetarians, meat-eaters had about twice the odds of being on aspirin, sleeping pills, tranquilizers, antacids, painkillers, blood pressure medications, laxatives (of course), and insulin. So, plant-based diets are great for those that don't like taking drugs, those that don't like paying for drugs, and for people that don't like risking drug side effects.

Want to solve the healthcare crisis? I've got a suggestion.

There is only one diet that's ever been proven to reverse heart disease in the majority of patients—a plant-based diet. Anytime anyone tries to sell you on some new diet, ask them one simple question: "Has it been proven to reverse heart disease? You know, the most likely reason you and everyone you love will die?" If the answer is no, why would you even consider it?

If that's all a plant-based diet could do—reverse our #1 killer, then shouldn't that be the default diet until proven otherwise? And the fact that it can also be effective in preventing, treating, and reversing other leading killers would seem to make the case for plant-based eating overwhelming.

Most deaths in the United States are preventable, and related to nutrition. According to the most rigorous analysis of risk factors ever published, the #1 cause of death in the United States and the #1 cause of disability is our diet, which has since bumped tobacco smoking to killer #2. Smoking now only kills about a half million Americans every year—whereas our diet now kills hundreds of thousands more.

So, let me end with a thought experiment. Imagine yourself a smoker, back in the 1950s. The average per capita cigarette consumption was about 4,000 cigarettes a year. Think about that. In the 1950s, the average American smoked a half a pack a day.

The media was telling you to smoke, and famous athletes agreed. Even Santa Claus. I mean, you want to keep fit and stay slender. So, you make sure to smoke and eat hot dogs to keep trim. And eat lots of sugar to stay slim and trim. Sugar is a lot better than that apple there, right? I mean, sheesh.

Although apples do "connote goodness and freshness," reads one internal tobacco industry memo, "which brings up many possibilities for making youth-oriented cigarettes." They want to make apple-flavored cigarettes for children. Shameless!

"For digestion's sake, you smoke." I mean, no curative power is claimed for Philip Morris—but, an ounce of prevention is worth a pound of cure. So, better safe than sorry, and smoke.

"Blow in her face and she'll follow you anywhere." "No woman ever says no." They're "so round, so firm, so fully packed!"

After all, John Wayne smoked them, until he got lung cancer and died.

Back then, even the paleo folks were smoking, and so were the doctors.

This is not to say there wasn't controversy within the medical profession. Yes, some doctors smoked Camels, but other doctors preferred Luckies. So, there was a little conflict there.

The leader of the U.S. Senate agreed. I mean, who wouldn't want to give their throat a vacation? How could there be a single case of throat irritation, when "cigarettes are just as pure as the water you drink?" (Perhaps in Flint, Michigan!)

And if you do get irritated? No problem; your doctor can always write you a prescription for cigarettes. This is an ad in the Journal of the American Medical Association. So, when mainstream medicine is saying that smoking, on balance, is good for you, when the American Medical Association is saying that,

where could you turn back then if you just wanted the facts? What's the new data advanced by science? She was "too tired for fun...and then she smoked a Camel."

Babe Ruth spoke of proof positive medical science—that is, when he still could speak, before he died of throat cancer.

Now if, by some miracle, there was a SmokingFacts.org website back then that could deliver the science directly, bypassing commercially corruptible institutional filters, you would have become aware of studies like this. An Adventist study in California published in 1958, that showed that nonsmokers may have at least 90% lower lung cancer risk compared to smokers. But this wasn't the first.

When famed surgeon Michael DeBakey was asked why his studies published back in the 30s linking smoking and lung cancer were simply ignored, he had to remind people about what it was like back then. We were a smoking society. It was in the movies; it was everywhere. Medical meetings were one heavy haze of smoke. Smoking was, in a word, normal.

So, back to our thought experiment: if you're a smoker in the 50s in the know, what do you do? Do you change, or do you wait? With access to the science, you realize that the best available balance of evidence suggests that your smoking habit is probably not good for you. So, do you change your smoking habits, or do you wait? If you wait until your physician tells you, between puffs, to quit, you could have cancer by then. If you wait until the powers that be officially recognize it, like the Surgeon General did in the subsequent decade, you could be dead by then.

It took 25 years for the Surgeon General's report to come out. It took more than 7,000 studies, and the deaths of countless smokers before the first Surgeon General's report against smoking was finally released in the 1960s. You'd think, maybe, after the first 6,000 studies, they could have given people a little heads up or something? No, it was a powerful industry.

So, one wonders how many people are currently suffering needlessly from dietary diseases. Maybe we should have stopped smoking after the 700th study like this came out.

As a smoker in the 50s, on one hand, you had all of society, the government, the medical profession itself telling you to smoke. And, on the other hand, all you had was the science—if you were even lucky enough to be aware of studies like this.

Now fast forward, 55 years. There's a new Adventist study out of California, warning America about the risks of something else they may be putting in their mouths. And it's not just one study. According to the latest review, the total sum of evidence suggests that mortality from all causes put together, and many of our dreaded diseases—heart disease, stroke, cancer, diabetes—is significantly lower in those eating plant-based.

So, instead of someone going along with America's smoking habits in the 50s, imagine you, or someone you know, going along with America's eating habits today. What do you do? With access to the science, you realize that the best available balance of evidence suggests that your eating habits are probably not so good for you. So, do you change your eating habits, or do you wait? If you wait until your physician tells you, between bites, to change your diet, it may be too late.

In fact, even after the Surgeon General's report was released, the medical community still dragged their feet. The AMA actually went on record refusing to endorse the Surgeon General's report. Why? Could that have been because they had just been handed \$10 million from the tobacco industry? Maybe not; maybe it's coincidence.

So, we know why the AMA may have been sucking up to the tobacco industry—but why weren't individual doctors speaking out? Well, there were a few gallant souls ahead of their time, writing in, as there are today, standing up against industries killing millions. But why not more? Maybe it's because the majority of physicians themselves smoked cigarettes, just like the majority of physicians today continue to eat foods that are contributing to our epidemic of dietary diseases. What was the AMA's rallying cry back then? Everything in moderation. "Extensive scientific studies have proved that smoking in moderation" is okay. Sound familiar?

Today, the food industry uses the same tobacco industry tactics—supplying misinformation, twisting the science.

The same scientists-for-hire paid to downplay the risks of secondhand smoke and toxic chemicals are the same paid by the National Confectioners Association to downplay the risks of candy, and the same hired by the meat industry to downplay the risks of meat.

Consumption of animal products and processed foods causes at least 14 million deaths around the world every year. 14 million people dead every year. Plant-based diets can now be considered the nutritional equivalent of quitting smoking.

How many more people have to die, though, before the CDC encourages people not to wait for open-heart surgery to start eating healthy as well?

Until the system changes, we need to take personal responsibility for our own health, and for our family's health. We can't wait until society catches up to the science, because it's a matter of life and death.

Last year, Dr. Kim Williams became President of the American College of Cardiology. He was asked why he follows his own advice that he gives to patients, to eat a plant-based diet. "I don't mind dying," Dr. Williams replied. "I just don't want it to be my own fault."

Thank you very much."

References are available at: <https://nutritionfacts.org/video/how-not-to-die/>

Dr Michael Greger can be contacted through his website, nutritionfacts.org. He requested that EJCAM readers visit his website to experience more of his ideas on nutrition and see his daily videos devoted to nutrition. He is a physician who has dedicated his life's work to understand how diet affects disease, and he shares this freely with his readers. He is also the author of a Times best seller with the same title as this presentation, "How Not to Die"