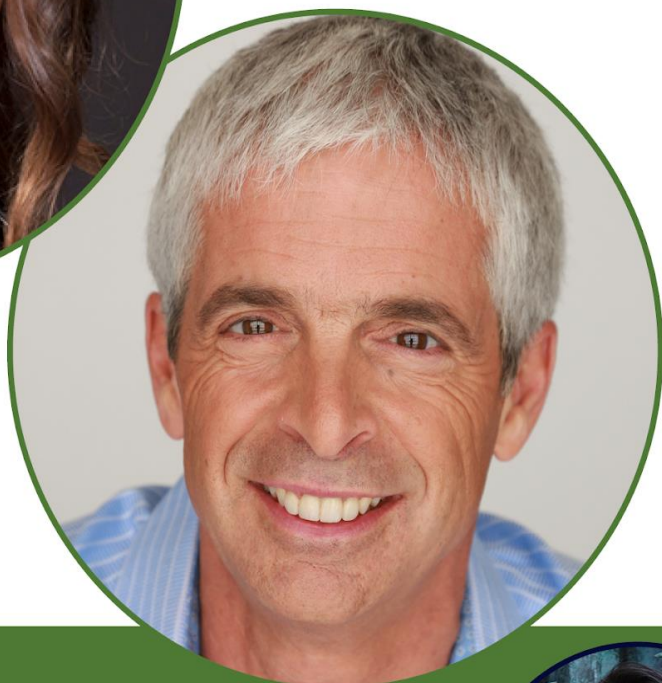


THE GRASS IS GREENER

MEDICAL MARIJUANA, THC & CBD OIL
Reversing Chronic Pain, Inflammation and Disease



**Mary Clifton MD
and
Dr. Tom O'Bryan**



*Contributing Experts:
Annabelle Manalo, PhD
and Lou Sagar*



The Grass is Greener, Medical Marijuana, THC & CBD Oil: Reversing Chronic Pain, Inflammation and Disease

By Mary Clifton MD and Tom O'Bryan, DC, CCN, DACBN

ABOUT THE AUTHORS

Mary Clifton, MD is an Internal Medicine doctor in New York City, with 20 years of experience in both the hospital and private practice and is a licensed by the New York State Department of Health to provide medical marijuana and is a recognized expert in CBD, Cannabis, and Medical Marijuana.

She is a published researcher, national speaker on women's health and osteoporosis, and author of four books, and two new soon-to-be-released books on CBD and Cannabis – what you need to know, how to use them and a COOKBOOK to support ease of use.

She is also a leading voice in telemedicine to bridge the gap in healthcare availability and affordable lab testing for long-term wellness.

She has a special interest in innovation in health care delivery and patient empowerment. An alumni board member at Michigan State University's medical school, Dr. Mary completed her residency training with MSU in Grand Rapids, Michigan.

She previously served on national speaker's bureaus for multiple women's health and osteoporosis pharmaceutical companies, including Eli Lilly, Amgen, Forest Pharmaceuticals, and Medtronic.

After authoring her health guide, Waist Away and a companion cookbook, Get Waisted, she designed a 30-day wellness program to help patients take control of their health, with health coaching branches in 74 cities and online.

Her passion is to not only help patients create a fast reset for their health and lives, but to support health practitioners to reset their practices and revenue through telemedicine and lab testing opportunities.

Dr. Tom O'Bryan, DC, CCN, DACBN. When it comes to getting healthy, Dr. Tom O'Bryan's goal for you is 'Making It Easy To Do the Right Thing'. As an internationally recognized, admired and compassionate speaker focusing on food sensitivities, environmental toxins, and the development of autoimmune diseases, Dr. Tom's audiences discover that it is through a clear understanding of how you got to where you are, that you and your Dr. can figure out what it will take to get you well.

Dr. O'Bryan's most recent book, "You Can Fix Your Brain: Just 1 Hour a Week to the Best Memory, Productivity, and Sleep You've Ever Had", was published through Rodale Books in September, 2018, to global accolades. This best seller offers a step-by-step approach to better cognitive function, from nutrition to environment to toxicity, ultimately creating better long-term memory and a sharper mind.

In November 2016, Dr. O'Bryan released Betrayal: The Autoimmune Disease Solution They're Not Telling You, an investigation into why our immune system, designed to protect us, begins attacking our own tissue (autoimmunity). Currently, over 500,000 people worldwide have watched the Docuseries.

Dr. O'Bryan is considered a 'Sherlock Holmes' for chronic disease and teaches that recognizing and addressing the underlying mechanisms that activate an immune response is the map to the highway towards better health. He holds teaching Faculty positions with the Institute for Functional Medicine and the National University of Health Sciences. He has trained and certified tens of thousands of practitioners around the world in advanced understanding of the impact of wheat sensitivity and the development of individual autoimmune diseases.

He is the founder of theDr.com and the visionary behind 'The Gluten Summit - A Grain of Truth', bringing together 29 of the world's experts on the gluten connection to diseases, disorders, and a wide-range of symptoms and ages. You can find this info at www.theglutensummit.com. His 2016 groundbreaking book, winner of the National Book Award and ranked #1 in several categories on Amazon.com, The Autoimmune Fix' outlines the step-by-step development of degenerative diseases and gives the tools to identify our disease process years before the symptoms are obvious and how to turn your health around, one step at a time.

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Chapter 1 - The ABC's on CBD

CBD Oils and What You Need to Know: Dr. Tom O'Bryan's Point of View and FAQ

CBD is such an interesting topic to talk about. There's so much misinformation out there, it's startling to see. The studies I'm about to reference are jaw dropping, you really won't believe all of the knowledge kept away from the mainstream public on the benefits of CBD oils. I don't want to get bogged down in the politics, but I'd like to bring you up to speed on the medical and historical side of CBD.

What is CBD? And are there any benefits to it?

So, first. What is CBD? CBD stands for cannabinoids (cannabidiol diodes). That's a really good Scrabble word. It is a family of components in the hemp plant. There's 113 different cannabinoids in the hemp plant. That is why no two CBD products are the same. Different products have different ratios of the extracts. This is why you will get different results from different CBD products. Some products have the simplest extraction possible and the potency of the product is minimal. Others are highly sophisticated and clearly are different, with dramatic beneficial results. There is no psychedelic effect to CBD. None.

There is an extract from the plant that you can take called tetrahydrocannabinol (THC). THC will produce an altered feeling. The "high" if you will. I'm not saying it's good or bad, just saying that that's the mechanism. But other parts of the plant, the CBD's, do not have any hallucinogenic effects whatsoever. Furthermore there are hundreds and hundreds of studies on the benefits of CBDs.

Now, I'm not getting into the aspect of the other parts of the hemp plant and the mind altering, relaxing parts of the hemp in THC. Some patients do dramatically well with THC, reducing their pain, increasing a non-existent appetite in severe diseases so the person will eat and stay alive. Recreational users of THC call it "the munchies". But when you're suffering from the side effects of chemotherapy, and you either do not want to eat, or you can't keep anything down, THC can be a lifesaver. I've had some history with that in the past, but I don't want to get into the politics of pros and cons. I'd like to stay on the CBD component for this discussion because there are no side effects and there is no hallucinogenic effect.

One such study comes from Current Oncology, a major medical journal about cancer and cancer research. Last year they came out with a study on the effects CBD has on children with neuroblastomas. Neuroblastomas are the most common solid tumor found in children, and this study is a perfect example of the hidden gem that is CBD.

The study showed there are no side effects to CBD, in fact it's just the opposite. The CBD increased the death of the cancerous cells in the tumor. The direct quote says this, *"Because CBD is a non psychoactive cannabinoid (meaning it doesn't alter how you think or make you think funny or anything like that) that appears to be devoid of side effects, our results support its exploitation as an effective anticancer drug in the management of neuroblastomas."* [a]

These researchers are not English majors. They're geeks. They write as clearly as they can to say, '*This Works*'. There are no side effects. It's not a hallucinogen. It kills cancer cells.

For parents who may have been hung up on the possible consequences this study shows them that those worries are unfounded. This isn't to say they should stop the other treatments they are using, to throw the baby out with the bathwater so to speak, but rather to try including this alongside those treatments. It's only common sense to want to give your child every fighting chance.

In a recent study in the Brazilian Journal of Oncology, 10 of 10 epilepsy patients, where their medications weren't working, had no seizures when put on CBD and no side effects. No seizures, no side effects.

So, 10 of 10 epilepsy patients who take it, their seizures stop completely, and they don't have any side effects. This didn't happen to them with conventional western medicine. The journals say it helps almost, if not everyone. It's not a drug. It doesn't have hallucinogenic effects. We have to disassociate the idea of CBD with the hallucinogenic effects.

These are only the first two of many studies I want to bring to light. There's a lot of information you deserve to know.

Why do we have hemp in every culture all over the world?

Hemp and garlic are the only plants, as far as I know, that grow in every culture of the world. Everyone that has a written history has writings about hemp and writings about garlic. There are many other plants that are in most places in the world, but, as far as I know these are the only two that grow everywhere, and they've been crucial to our species and our survival.

Before I explain this further, let me give you a little background information on receptors.

What are receptors and why they're so important? Receptors are sites that sit on the outside of your cells facing the bloodstream. The way you get hormones inside your cells is the hormones are in the bloodstream. Your bloodstream is really just a highway with lots of traffic. Receptor sites are the receiving vehicle to get things inside the cell. Receptor sites are like a catcher's mitt, and the pier (your blood) throws the ball of hormones to the catcher.

For an example, as estrogen is going by in the bloodstream, it gets attracted by a magnetic pull into the estrogen receptor site, which receives the hormone, and allows it to go inside the cell.

Estrogen will not go into a thyroid receptor site; it only goes into an estrogen receptor site. Adrenal hormones, or stress hormones, go into stress hormone receptor sites. They don't go into other receptor sites.

The reason I explain this here is that we are always receiving all sorts of hormones through our receptors, including hormones from CBD.

This may alarm you, but don't worry, things have always been this way. Hemp and Garlic grow in every culture of the world, so both plants grow everywhere. As the Hemp plant

grows it gives off pollen, and this pollen goes into the air. When we breathe that air it goes into our bloodstream, and the pitcher throws the ball of CBD hormones to it's catcher, the receptor sites. These are the opiate receptors. They are the receptors designed for endorphins and enkephalins, hormones 200 times more powerful than morphine.

Stress equals greater inflammation. That's one of the reasons why we have these receptor sites. Pollen in the air from the hemp plant stimulates the endocannabinoid receptors in our brain so it's like endorphins and enkephalins. When you get deep belly laughter, you laugh so hard that it hurts. You just hold in your gut, but you feel good afterwards. You've produced endorphins, and the endorphins just stimulate your endocannabinoid receptors in your brain. You just feel good. So your emotional stress calms down, and when emotional stress is calmed down, physical stress will also calm down.

Things have always been this way, it's part of the survival mechanism of the species. Our ancestors had to get up and go when the days were overcast and gray and they hadn't eaten. They had to get uplifted and that's what the opiate receptor sites do. That's what endorphins and enkephalins do; they give you that feel good, get up and get going feeling.

CBD binds onto those opiate receptor sites and the natural CBD filled pollen in the air we breathe gives that pick me up. It's not because it's evil, and it's bad for you, but rather a natural part of the world.

Can CBD oil help neuropathy?

In a 2016 edition of Autoimmunity Reviews, it stated CBD's are effective in reducing inflammation in arthritis, MS, and had a positive effect on neuropathic pain in diabetes. Neuropathy is the nerve pain that comes with people that have had blood sugar problems, but there are also hereditary neuropathies and others may have nerve disease related to thyroid or vitamin deficiencies. Whether you have blood sugar problems or your neuropathy is from another cause, nerve pain is nerve pain. The endocannabinoid receptors are on your nerves. CBD's reduce the inflammation around the nerves and stimulate the healing of that tissue.

Here's a testimonial from Mary Alice in Santa Cruz on what CBD did for her:

"CBD's the only thing that has completely erased my residual pain from shingles after two years. The CBD I take is a three to one with THC."

It seems so hard to find any reliable information, what dose of CBD is good for me?

The reason that it's so hard to find reliable information on dosing is because there are so many different kinds of products out there. We're currently in the wild west of medical marijuana and CBD oils. This is one of the major reasons why there is a movement to have CBD legalized and regulated by the pharmaceutical industry.

I personally don't think that's a good idea because the price will go up dramatically to make it profit driven, but that is a discussion for another time. As it stands now in the Weed Wild West, there are all kinds of quality and non quality products. There is a product that just came on the market called KBD. I would suggest to keep an eye out for that product, it's

extremely high quality CBD. The dose is 600 milligrams of CBD per dose and 600 milligrams of Kava.

KBD is getting dramatic results in the clinical trials because of the added Kava. Kava is an anti anxiety, it's stimulates receptors to calm the body down. Adding other herbal therapies to the cannabinoids may help control the underlying condition even more effectively. There's a saying in the South Pacific "where there is Kava, there is no war." This is what makes KBD so different, and what amplifies the benefits of the CBD.

But all in all there is no magic one dose that will be perfect for every person. People are snowflakes. The dosing to reduce tumors was 400 milligrams in the neuroblastoma study referenced earlier.

Does a patient need to take CBD the rest of their life?

Underneath that question is the unspoken elephant in the room when it comes to CBD: Is it addictive?

No, it's not addictive. It is a really good question to ask, because that takes us to a bigger discussion... why do I have whatever the symptom is? What makes my body react?

That's what my book '*The Autoimmune Fix*' is all about. And Yes, this is a shameless plug. The book is to help you look at where the mechanism is that the inflammation comes from. It's different for everyone. As the saying goes, people are snowflakes.

It might be mold in your house, it could be mercury from eating too much tuna, a gluten sensitivity... You have to find out where the trigger is so that you stop throwing gasoline on the fire. As you've all heard me say, every degenerative disease that I know of is a disease of inflammation at the cellular level. The cell is always on fire. The question is about what cell and what gasoline. A brain cell or a kidney cell? Is it gasoline or kerosene? We have to find out where is the inflammation coming from and after you find that out then the need for healthy, safe anti inflammatories like CBD will be reduced. You won't need it.

So, it's not addictive, and it's safe to take long-term as far as I know. Everything I've read points to this conclusion

To the question of whether you have to take it forever... I don't think so. If you heal the underlying conditions of inflammation, the symptoms that show up as a disease will go away. When these underlying conditions are cured you can stop taking the safe, natural anti inflammatory like CBD. CBD itself also helps the underlying inflammation. The British Journal of Pharmacology stated that CBD reduces the inflammation and activates the genes to repair intestinal permeability with no side effects.

(<https://www.ncbi.nlm.nih.gov/pubmed/21745190>)

A lot of oils are popping up and the CBD oil is just one of the many options, why is it the one you would recommend? Are there any other natural options besides CBD?

Like I said before, we live in the Weed Wild West, but it's not just CBD oil on the market. There are a lot of gunslingers out there just trying to make a buck as fast as they can. The real trouble is finding the diamonds among the snake oil. The prices are what bother me the

most, because I know how much it costs to make this, and I know the incredible profit margins that these people are getting. It costs people \$150 a month, sometimes more, for something that is much cheaper than that to produce.

People are being taken advantage of. Some people have no problem allocating the dollars for this but many, many people are pinching their purses trying to buy CBD as they're desperate for relief. They can't afford the medications prescribed by their doctors, and now they can't afford the alternatives.

Unfortunately there is no easy guideline for quality. Some of the hemp journals will have articles on quality of CBD, you just have to do some investigating. Talk to your doctor and visit a dispensary to find out more about the different types.

I DO KNOW the quality of the Sun Horse products, and I'm proud that they are the purest and the most effective of anything I've seen out there. I can speak more to that later.

Will CBD help with cognitive decline, dementia, Alzheimer's patients?

If you want to get a big picture view on Alzheimer's read my friend, Dr. Dale Bredesen's book, *The End of Alzheimer's*. He's reversed over a hundred cases now. To look into if CBD will help this condition, we must look into what causes Alzheimer's

In 2015, a paper came out on CBD that it blunts the damage from beta amyloid and they identified the mechanisms. It's ppar gamma mechanism CBD suppresses ppar gamma. You may be wondering, why are we talking about beta amyloid?

Beta amyloid is what's produced in the brain that will cause plaque, and that's what causes Alzheimer's. Beta amyloid is an antibacterial and an antifungal, your brain makes it to fight any bacteria, mold, or fungus in your brain. Your immune system is trying to protect you, but in doing so hurts you. Much like with a fever, the immune system hurts you in trying to save your body. Viruses are another cause of beta amyloid, specifically herpes. There are over 146 studies last time I checked on Herpes Simplex 1, the cold sores that people get, and Alzheimer's being linked.

When your body makes beta amyloid, plaque is formed. One researcher said we think the plaque is just to wall off the disease in case there's any life left in it, So that it can't get out and harm the brain. This wouldn't be a problem, except if you have bacteria, a virus, mold or fungus coming into your brain everyday, you keep making more and more beta amyloid. That starts accumulating. Here comes Alzheimer's.

A study in 2015 said CBD blunts the damage from beta amyloid. It also stimulates hippocampus neurogenesis, meaning new cells in the hippocampus (the area of the brain where memory and processing comes from).

"All these findings report the inescapable role of this receptor in mediating CBD actions." So it's inescapable that CBD affects ppar gamma. Ppar gamma is what triggers the damage from beta amyloid. It's inescapable, the CBD suppresses that damage.

Another study came out in the British Journal of Pharmacology in 2016 that talked about the vascular response to CBD and how it suppresses high blood pressure and cirrhosis of the

liver. That's just another benefit that comes from it. It's kind of exciting for me to look at these studies.

I talked about that with the discussion on genetics and Alzheimer's for people that all the studies on the genes and if you carry the Alzheimer's gene, the numbers are not good at all. But that's because all those people kept living the same lifestyle creating all the inflammation and so if you've got the weak link in your chain, is your brain and Alzheimer's symptoms, well, that's the weak link in your chain. Stop pulling on the chain. The way you do that is figure out where the inflammation is coming from.

Would it help for myelin repair for someone with CIBD or MS?

Absolutely. That's exactly what those studies talk about. Here's a study on MS. There was over a 300% reduction in lymphocytes that triggers the inflammation and a reduction in demyelination, meaning a reduction in your myelin being killed off, which is what causes MS and in paralysis of the back legs of the test animals. 300% improvement in all of those categories in animals that they induced MS when they gave them CBD. It's much more than just those few conditions.

But you have to stop throwing gasoline on the fire. You have to figure out where the myelin destruction is coming from. There's a test everyone should consider, Laboratories Viome and their stool analysis is out of this world. There is so much benefit to it. If you want to watch a video, go to Bulletproof, and my friend Dave Asprey interviewed the owner of the laboratory, Naveen Jain.

Did you say that anxiety and depression are inflammatory?

Oh, yes. Every brain dysfunction has inflammation as the mechanism of the disfunction. Go to PubMed and type in depression and inflammation. We've been led to believe that depression and anxiety are problems with your brain. There's something wrong with you, but we know this is not the case. There is the underlying cause...inflammation. A cause that CBD treats.

As far as I know, every brain dysfunction has a breach of the blood brain barrier. The only way inflammation occurs is by molecules getting into the brain that shouldn't be there. Whether they're stress hormones or toxins from the bloodstream, these molecules get into the brain. Your immune system gets activated to fight these invaders, and here comes the inflammation. When you get leaky gut, you get a leaky brain

In every talk that I give, if the topic of leak comes up, I say how many know or suspect they may have a sensitivity to wheat. It's usually 80 to 90% of the room. Then I'll say, "For those of you that raised your hand, how many of you know that if you have an inadvertent exposure to wheat, it seems to affect your brain? And about 80% of the room raised their hand at that. 80 percent of the first 80%. They said yeah I've got a sensitivity to wheat and then about 80% of them said yeah, it affects my brain. That's the most common symptom is brain dysfunction. It's a breach of the blood brain barrier that allows that to happen.

Do I need to take a CBD that has some THC in it to help with sleep, or is just straight CBD best?

Well, I don't know about best. Some people do CBD and it works great for them. Some do it with a little THC and that works great for them. Try both and see what works best for you.

Some Testimonials to the Benefits of CBD and What More Can Be Done

My son has severe autism and takes CBD oil three times a day. He's made incredible progress since going on it a few months ago. He's even beginning to talk. It's revolutionary.

I would also suggest that you look at gluten free, dairy free diets. There are so many triggers that can cause autism and the less inflammation that child's brain has the better. If you don't want to immediately switch, I recommend at least getting tested. The test is on my website: www.TheDr.com - just search for Wheat Zoomer. The Wheat Zoomer test is the best test out there to look for sensitivity to wheat. If that one comes back positive, you've got a problem. It doesn't matter how you feel right now, it's killing off cells inside of you if you have elevated antibodies.

My husband has nerve damage from compressed nerves in his back, and we are just now experimenting with CBD and THC edibles. Any suggestions on dosing would be helpful.

Start low, and gradually build it up. I don't know of any side effects, although if you're including THC, then you for sure want to start low and build it up. With the products that I've seen for CBD, they're quite effective. 600 milligrams is a great dose, but 200 milligrams can work really well if it's a high quality product. It's not as easy as going to the pharmacy, and you always get the same product no matter where you go in the country. You have to be sure to read all labels, and know what you are getting.

We make suppositories for my husband for colon cancer.

Well, great. Good thinking. Stimulate those endo-cannabinoid receptors in the gut to calm down the inflammation and the pain in the gut. I've not recommended CBD in the past, but as I did some more research, I said, "Whoa, I need to put this on the list to start including in our discussions when someone has intestinal issues."

I've been taking CBD capsules two times a day. It's been more effective on my psoriatic arthritis inflammation than any prescriptions I had.

And of course, there are no side effects to it, so it's safer than most of the pharmaceutical prescriptions for psoriatic arthritis.

A Final Note

You've learned the truth. CBD has no side effects, it's not hallucinogenic, it helps kids with solid tumors. Many studies on its effectiveness with epilepsy patients, diabetics, MS patients, arthritis patients, intestinal issues, which you all know is the gateway to the development of all autoimmune ... or most all autoimmune diseases.

No reason in the world for all the stigma except that some people are against this compound from hemp. You hear these puritanical statements that hemp is the Devil. No it's not. There

is a hallucinogenic-type compound in hemp called THC often referred to as ‘marijuana’ (and whether that compound is good or bad is a long discussion that is going on across the Nation right now). But the CBD component of hemp is NOT hallucinogenic, proven beneficial for many health concerns, has thousands of testimonials that it was “the only thing that helped with my.....”.

Almost every medication that we have, initially came from some plant in nature. Right? CBD came from a plant in nature. And then researchers tried to reproduce the benefits of that plant and then they may have done a chemical version of it, but they start with plants and nature.

CBD comes from a plant in nature that is in every country of the world. Every country grows this stuff. The ideas about THC, another component of the hemp plant, yeah, there's some debate there. I can understand the debate. I think it's a little puritanical; people are dead set against it.

CBD, we have to put over here. THC we put over there and you can have topics, discussions on both of them but this one helps. There are so many studies, just go to Google and type in CBD, and whatever disease you want to know and just see if there aren't some studies there on it already where the researchers that are not involved in politics are talking to us about it. And you read that and you go, “Oh my goodness. Wow. I didn't know that.”

Continuing the Conversation on CBD: An interview with Dr. Tom O'Bryan, Dr. Mary Clifton and Dan Moriarty

Dr. Tom: I've got my friend Dr. Mary Clifton who is an expert on the use of CBDs. These powerful herbs that can help us with so many different conditions. It's really exciting to be talking about this one today. Dr. Mary, welcome.

Dr. Mary: Oh thank you so much Tom. It's great to be talking with you today. We've had so much fun over the last several months working together on this project.

Dr. Tom: Yes, yes. I agree. And this ebook that we have has just been a pleasure to put together with you.

Dr. Mary: I've been an internal medicine doctor for 22 years, and I'm licensed for the state of New York to provide certifications for medical marijuana. My life has been touched, as I'm sure some of you already know, recently with some very intense experiences surrounding cancer deaths in my family. Also in my close friends where marijuana was avoided out of fear or a lack of understanding and it led to more problems, more pain in a terminal situation, and another friend who embraced marijuana at the end of her life and was able to move much more confidently and safely, and with considerably less pain toward her final moments.

So it's inspiring for me to be able to be on something that's innovative, and cutting edge, and very exciting. I think what most people don't know Dr. Tom, and what makes you such a terrific thought leader in this realm of chronic pain, anxiety, and cancer management, is that CBD oil is not marijuana. You don't have to have a medical marijuana card. It doesn't have to be legal in your state.

Dr. Tom: Well that's true. You don't. CBD stands for cannabidiols, and that's a component of the hemp plant. You know the hemp plant grows in every area of the world, and this is one component in there that is not a psychoactive. It doesn't alter your mind function. It doesn't make you silly.

Dr. Mary: It doesn't get you high.

Dr. Tom: Right. It doesn't make you high. It actually stimulates. There's a whole world of receptors. Now receptors sit on the outside of a cell, right? A receptor for estrogen for example, Estrogen comes into that receptor site, and it turns the doorknob to open the cell so estrogen can go into the cell. But thyroid hormone won't go into an estrogen receptor site. It goes into a thyroid receptor site. Melatonin goes into a melatonin receptor site. All of our hormones go into different receptor sites.

Dr. Mary: Exactly.

Dr. Tom: Hormones are unique to the receptor sites, but there is one family of receptor sites on every cell of your body. That means that these substances can help every cell of your body, and that is the endocannabinoids, which is what CBD is. CBD is in the family of these endocannabinoids where there are receptors on every cell, so that if you have a problem with an eye cell maybe endocannabinoids can help. If you have a problem with your myelin, which is the saran wrap around your nerves, we know endocannabinoids can help with that. So CBD can help with many different conditions. The physiology of it is that we have these receptor sites on every cell that may be affected by endocannabinoids.

Dr. Mary: It's exciting and reassuring for people to know that the endocannabinoid system is already in place and that there exists in your body already a level of cannabinoids. So when you're taking a product like this, it's similar to taking a product like Lexapro, or Celexa, or Cymbalta for depression where you're simply trying to increase the presence of different neurotransmitters, or other communications within the body, and just improving cell to cell communication. So the endocannabinoids are already there, but using the CBD oil helps to potentiate those systems.

Dr. Tom: In your example of the antidepressant medications that our brain has receptor sites, and those medications stimulate the endocannabinoid receptor sites. The problem is though medications stimulate other receptor sites also. That's why there's a list of side effects with all those medications because of the other systems of the body that may be affected. Whereas with endocannabinoids, I don't know of a list of side effects from the cannabidiols from hemp. I don't know of a list of side effects for those.

Dr. Mary: The wonderful thing I think about CBD and that we've covered in the book is that there's no risk of death. A lethal dose on so many drugs is calculated, and it's surprisingly narrow where you are in an area where the drug is helping you, but with a slightly higher dose the drug can become lethal to you, and you of course, you get all the time on television where they say this drug can cause this whole slew of problems including death. But in the case of medical marijuana or CBD, just not in that realm. There really is no lethal dose.

Dr. Tom: It's comforting when people know that, that it's that safe.

Dr. Mary: I think your recommendation would always be, in any case, to go start low and go slow. That's always my recommendation to just start with the lowest possible, reasonable dose for treatment and titrate, and see over time how your body responds to it.

Dr. Tom: Yes. Yes. And where might you start when you say start low? One of the common delivery systems is a pump bottle. So you pump a couple of squirts in your mouth. If the dosage on the label says two squirts once a day, with most people ... We should be dosing all of our nutrients and all of our supplements the same way we dose our medicines. And that is by body weight. So if you have a child that's having seizures, their dose should be much less than 190 pound guy that's having brain fog.

Dr. Mary: Absolutely. Absolutely.

Dr. Tom: And so how do you start that Dr. Mary? If someone's going to get something, and it says the standard dosage is two pumps.

Dr. Mary: Oh I mean I think that it really is very dependent on the setting, and it's dependent on the product because the concentration of the product is going to be different, and what you're trying to do, exactly what symptoms you're trying to manage are different. It would be helpful to start with something like anxiety or PTSD, or depression which a lot of people use these medications for management of those conditions. And I think you can start really quite low, and see how your body responds. I mean the nice thing is, again, that the lethal dose just doesn't exist. So titration of it is hard to make an error. It's hard to put your body at risk. But it's reasonable to start low and see where the response goes.

And I think it's probably unwise in the setting of something like seizures, and a small child to proceed without very close monitoring with a doctor who clearly understands what they're doing. And then I think too Tom, and don't you, the delivery system is really important. When you're thinking about, especially with oils, holding them in your mouth and allowing them to cross over the mucous membranes results in an onset of action much quicker than if you were to swallow it, and then it'll behave more like an edible and be a 30 to 40 minute onset of action.

So we need to think about what the patient is coming to us with. If there's a chronic low level of generalized anxiety, or if there's anxiety that is intermittent and quite severe. Then that really sort of declares the delivery system for us.

Dr. Tom: And for those of you who are going to try CBD, you always start slow. You titrate up. But you also have to realize that if you're starting slow, and starting gentle, you have to be patient. That it may be the dose for you ... I'm just going to make this up depending on the product, but it may be the dose for you is five pumps. Maybe. Right? So if you start with one pump and you do that once a day or twice a day. One pump and you don't feel anything, and then you go to two pumps once a day, and then two pumps twice a day over the course of a week, you don't feel anything. You don't throw the baby out with the bathwater. You just keep working it slowly, slowly bumping up, bumping up, bumping up, until you find the dose where you say, "Hey, I just feel okay. My pain's down," or "My anxiety ... I don't feel anxious today. Oh good. Maybe that's the dose." And so it's safe to be playing slowly in that world of bumping it up.

Dr. Mary: That's excellent advice, and also to not give up hope that the product just didn't work. Because in many cases, the dosage is much higher than you would have anticipated it would be, and that slow titration is really valuable, too. We'll have some titration tools available for you soon that will make it easier for you to monitor your titration process. But you know where it's more of a spontaneous opportunity to assess your anxiety. But it wouldn't even hurt to put a recurring alarm on your phone for example, and over the course of the day have your phone remind you that you're monitoring your anxiety. Where are you at?

Because the studies show if you sit and think about how anxious am I really, is this working for me, you may be thinking that it's not working. But if you're interrupted in your day-to-day activities, and you assess your anxiety you may find, "Well actually I'm quite a bit less anxious than normal."

Dr. Tom: That's a good point. Because if you're like, "Oh am I anxious? Am I anxious? Well I'm not sure if I'm ..." You get more anxious from trying to evaluate if you're anxious or not. But if you're -

Dr. Mary: So it's helpful to just sneak up on yourself a little bit with an alarm -

Dr. Tom: That's a great suggestion. Really good suggestion. When your alarm goes off you say, "Oh no. I'm fine. Oh great. Cool."

Dr. Mary: "I actually feel really good." Yeah. And I've talked to people who say, "You know, I didn't notice a difference at all, and then I went out to go for a walk and wow. I felt totally different. Felt so much better." So sometimes just instead of sitting through a dose, change your environment a little bit. Walk it out or try to do an activity, and see how your anxiety level follows that. You might find that it's really good. But I agree with you Dr. Tom. So many times ... I talked to a doctor last week at the Cannabis Expo here in New York City. He said, "You know my patients don't get any results from this stuff. I've tried it on five people, and nobody's gotten a result."

And then I asked him, "How are you titrating? How are you talking to them?" No. He's giving the recommendation to try it, and then you know without any follow up. That followup, that ongoing self-assessment is critical.

Dr. Tom: Yes it is. And there are so many triggers that might be causing your symptoms. There are so many triggers, and CBD is not a magic bullet that if you are eating foods that are inflammatory for you, those inflammatory foods might be causing a lack of blood flow into the brain. That's called hypoperfusion. That's a lack of blood flow into the brain, and then with that lack of blood flow, if it's in the area called the frontal lobes, it may trigger anxiety because of a lack of blood flow into that area of the brain. One of the symptoms you might get is anxiety. So if you're taking CBD for anxiety, and it seems to help a little bit but then you feel lousy again the next day, it might be the food that you're eating.

There are so many triggers that might set it off. So you can't use CBD as the miracle of life and then keep living the lifestyle that's caused the problems. Right?

Dr. Mary: Absolutely. There's the food; there's the nutrition, the movement, the relationships, and so anything that you take for management of your anxiety ... You know studies have repeatedly shown that taking a Zoloft helps people feel better, or taking a Lexapro, or a Celexa. It also transiently increases suicide rate. So it's not without its level of risk by itself. But studies also show that going to therapy is just as effective as taking an antidepressant. So if you want to get off your antidepressants, you know going to therapy and having somebody to be able to listen to you would make a big difference in how you feel.

So I think part of what Dr. Tom and I both do is provide CBD, opportunity for medical marijuana. That's a preference. And then have a discussion around everything that you're doing and try to keep that line of communication open so that you keep thinking about everything that's contributing to your anxiety or depression.

Dr. Tom: I fully agree with you. That's the goal here is to enhance the quality of life for people, and here's another example. The most common system of the body that's affected by a sensitivity to wheat is the brain, not the gut. For every one person with gut symptoms, there are eight that don't have gut symptoms. They've got brain systems which can be depression, or anxiety, or brain fog, or memory loss, or headaches, or seizures, or Attention Deficit, or autism. All areas of imbalance in brain function. But to show you the effectiveness of CBD, I found a study that is in the journal, Current Oncology. That means current cancer care.

It's a journal for cancer doctors called Current Oncology, and on neuroblastomas. And this was the exact quote. I wrote it down because it just caught me. Neuroblastomas is one of the most common solid cancers in children. Using CBD, no side effects, increased apoptosis, which means killing the tumor, and without side effects. And this was the quote. "Because CBD is a non-psychoactive cannabinoid," that means it doesn't affect your thinking. It doesn't make you high. "it appears to be devoid of side effects. Our results support its exploitation as an effective anti-cancer drug in the management of neuroblastomas in children."

Dr. Mary: Wow. What a wonderful thing to read.

Dr. Tom: Isn't that a great quote?

Dr. Mary: There's so much in everything you just said in the last couple sentences. Certainly there's plenty of serotonin and norepinephrine in your brain, in your spinal cord, in the central nervous system as we refer to it. And the CBD has an impact there, as of course does the THC, the component, the cannabinoid that creates that sense of euphoria, that sense of feeling high. But the CBD ... There's also just as much serotonin in your gut, and actually tons more receptors in the gut than there are in the central nervous system. So a lot of the communication between the gut and the brain is an ongoing lifelong thing. The gut health really impacts brain health.

We've got great new research coming from people where we disrupt the relationship between the gut and the brain. We used to do these vagal nerve dissections. Vagotomies that helped people with ongoing, persistent, ulcer diseases. We do them much less frequently now but people with peptic ulcers, really sour stomachs that aren't getting good control with antacids will go in and clip that vagus nerve. And that will help the secretions to reduce. But in disrupting that communication between the brain and the gut, there are all kinds of endpoints that they're studying now. Finding there are relationships with the development of Parkinson's Disease. The brain and the gut are communicating constantly. You're absolutely right.

Dr. Tom: There are two more studies I want to tell you because they both got me excited. This one in the journal Epilepsy. Ten out of ten epileptic patients had no seizures nor side effects on CBD. Ten out of ten that it helped dramatically. And the other study in animals that they induce multiple sclerosis where the animals just couldn't walk anymore. It's like an MS patient that's in a wheelchair.

A 1% cream that they apply on the animal's legs, created neural protective effects with a greater than a 300% reduction in paralysis, in demyelination, meaning losing the saran wrap around the nerves which is what MS is. It reduced it by over 300%, and it reduced all of the inflammation around there. So CBD has such wonderful benefits without any side effects. The researchers say it again, and again, and again. Without side effects. No side effects. Easy to use. So it's just exciting to be talking about this with you.

Dr. Mary: And I think really exciting to go back to what you said about cellular apoptosis, and vascular genesis, what happens with cancer cells, when a cancer cell develops. It goes out of the normal growth patterns and growth relationships of an ordinary cell in the body and will continue to grow, and will stay alive longer than an ordinary cell. And the other thing that cancer cells have to do is bring a lot of blood flow to them because they're growing so fast. So part of their job is to build a lot of new blood vessels and direct a lot of blood flow to them to help them grow faster.

And CBD in studies has been shown repeatedly in whatever cancer you would like to name, in breast cancer, in liver, in lung cancer, to put cancer cells into cellular apoptosis which means put them on a path towards death at a normal pace instead of this sort of existence where they can go on forever and moves them into a more normal cellular pattern. And it also reduces that genesis of blood vessels. So it directly fights cancer.

Dr. Tom: It's marvelous to see. I'm looking at another study in 2015, in the journal PLOS, and it was CBD that blunts the damage from beta amyloid, which is the mechanism of Alzheimer's. It's via PPAR pathway, PPAR gamma pathway, that it stops the plaque that forms with Alzheimer's. It also stimulates hippocampal neurogenesis. That's the area of the brain that memory comes from. And so you're stimulating new brain cells in your hippocampus when you're using CBD. And it said all these findings report the inescapable role of this receptor in mediating cannabidiol actions. So they're talking about it in neurogenesis, in neuroprotection.

Dr. Mary: Yes. I think in addition to being helpful with anxiety and depression, there's a neural protective effect that continues to get more and more information surrounding it for seizures, or Parkinson's. It's worth it. And for Alzheimer's. It's worth a try in all of those conditions to try to give your brain that extra little boost to B6 in these regions.

I was going to ask you more about cancer and if you have had really terrific experiences with patients with cancer. Not only I think for managing nausea, but also for helping to extend the quality of life.

Dr. Tom: Yes. My personal experiences with cancer are limited. I don't have a cancer treatment center. However what I read in the literature consistently speaks to different types of cancers and the benefits of CBD that people feel more relaxed. They have less pain. They have clear brain function. Depending on how far advanced the cancer is, you know we can't say the CBD reverses cancers. That's not true. But some of the studies have shown its benefits for some of the actions that calm down the inflammation and things like that.

Dr. Mary: I think it's a great idea that can potentiate the other things you're already doing, and I'm certainly not seeing people stop everything else and just use the CBD oil in most of the cases. I'm working with patients for potentiating existing management, or potentially potentiating the benefits of existing chemotherapy, and also limiting the side effects of chemotherapy and radiation. Any nausea, fatigue, generally feeling unwell that's contributing to anxiety surrounding their cancer, or their cancer treatment. All of those things are responding very nicely to administration of CBD.

Dr. Tom: Yes it's just a great tool to use with no side effects. These studies again, and again, and again, these researchers say, "No side effects." And we have to remember these researchers, when they're writing, they're geeks. They're not English majors. They're a geek. Right? And so when they say, "No side effects," what many of them are trying to say is, "Why wouldn't you try this? I mean there's great potential benefit, and no side effects."

Dr. Mary: Exactly. It's scientific writing and it gets a little dry, and I think there's sometimes when you're reading these that you really do have to try to read between the lines.. As everyone knows, anybody who's turned on a television in the last 15 years since direct to consumer advertising has become so huge, you get these horrible lists of side effects and outcomes. But it is so unusual for us to be able to present you with a paper, or to have a product with a team of researchers tell you, "Don't worry about this. It appears to be helpful. There appears to be no measurable harm."

I mean, no measurable harm is really an unbelievable thing- with all of the measuring tools that we have, and with all of the great brains we have studying this because everybody has been so afraid of reefer madness, and people starting marijuana as a gateway drug. And actually now the studies show that the only thing that marijuana functions as a gateway to is tobacco use because sometimes when you're buying it on the street, they will cut it with a little tobacco to extend the content of the drug, and extend their profitability. So sometimes people will get a taste of tobacco unfortunately.

But there really has been no evidence to support that people that smoke marijuana eventually snort cocaine or shoot heroin. None of that is on the horizon. So it's safe, and reasonable to give it a try. And this in setting of researchers who are studying in the midst of the drug war. And most of the research being funded has been in a funded way such that we can promote the drug war and continue to be able to express concerns surrounding the use of these drugs. So when they come out with a positive result, with something that is reassuring to you in the setting of all of those factors, it truly is remarkable.

Dr. Tom: You know, when people think, "Okay. This sounds like it's worth a try," and then they're looking to see, "What am I going to take? What kind of a product am I going to take? Currently it's like the wild West out there. You know the number of products ..." I mean I just lectured at the AutismOne Conference in Chicago, and every other vendor was saying, "My CBD is the best." "My CBD's the best." So people, the consumers, don't know where to go and what to do. How do you tell what a good quality product is? And because of that we have a guest that we're bringing out now who, for full disclosure, is my partner in an herbal company we have called Sunhorse Energy.

My partner is a world expert in the creation of the formulas. He's called a formulator. He knows how the herbs talk to each other, and when this herb works well with that one. And so for all of us who are experiencing the wild West out there in CBD products, we thought we'd bring on Dan Moriarty.

We want to talk about how to tell what a good CBD product is, and even before that, why is CBD so prevalent around the world? Why is the hemp plant? And I learned this from Dan, but he shared this with me. Dan can you talk for a moment about where the hemp plant comes from, and why is it so common?

Dan M.: Okay. That's an excellent question, and it's a wonderful place to start. In my travels from the tropics to Alaska, and observing plants, and observing where and what zones, moving South to North, you obviously are changing in latitude. You're going to start running out of an area where a certain plant can grow.

But cannabis, or the hemp plant, is ubiquitous, or common to the whole planet from Alaska to the tropics. So that's why genetically it's in our system. That's why the endocannabinoids system exists. Because humans have been exposed to this plant since humans have been around. It's just that simple. The plant was here first. So we have been exposed to it all this time.

There's been an eradication effort, at least in our country and in North America in particular to eliminate this very beneficial plant that's been part of the human experience since the beginning of time.

And when I say eradication effort that's exactly what I mean. They've wiped out the original indigenous hemp, so that it no longer exists in our biome, in our experience, in our environment. So what that means is that as you both have eloquently explained, our receptors, the trillions, billions, millions, whatever the number might be, of these CBD-1 and CBD-2 receptors are not being exposed to the molecule at the proper proportion. So what that means is they're like hungry little receptors out there wanting to be filled with the proper molecule.

And Dr. Tom you're absolutely right. It's a lock and a key. Only that molecule will satisfy that receptor.

Dr. Tom: The hemp plant is everywhere on the planet. What does that mean? It means that the pollen from the hemp plant is in the air. So the pollen's in the air, and we breathe the pollen, so our ancestors have always been stimulated by CBD.

Dan M.: Absolutely. When I was in the jungles of South America early in my career working to discover certain plants, because that was basically my job at that point, I remember standing in a hardwood jungle, not a "soft chop every plant with a machete jungle" but a hardwood forest. Double canopy, and even triple canopy. These trees went up hundreds of feet. And the light would come down, just this kind of green light because it's diffused as it comes through the canopies. You could see the actual movements of the air, and there was literally pollen like you could cut it with a knife. And you're breathing this stuff.

And what it does, if you're there with the proper attitude, you realize that it's turning on these primordial genes in your system, and you feel unbelievable. When you're down there exposed to this, especially when you engage the mind in the process, you're starting to realize more and more things from a very basic level. From the limbic system that can't really attach any other cognition to. So these pollens, and all these little plant particles are in your system.

Now here in North America, we don't live under a triple canopy forest. But you're right. The pollen from the cannabis plant, the hemp plant, was everywhere, being carried around the world on the winds. But when you're in your native area, you know whatever your area is, normally there would be what they used to call ditch weed. It was just hemp. It just grew in the ditches, and it wouldn't get you high because it didn't have enough THC. If anybody tried to smoke it, you would not get any kind of a psychoactive effect. Very minimal if anything.

But the CBD content was definitely high because it's a direct relationship. When you take cannabis that's been manipulated by humans, as in bred specifically to raise the THC levels, conversely you're lowering the CBD levels. Now when the CBD levels are higher, the THC levels are lower. This is just part of the way the plant is designed. All CBD is not created equal. From a formulator standpoint. It's like the bible. You have to know this.

All CBD is not the same.

But let's talk about how you get the CBD out of the plant. You want to get the full spectrum. That's the first thing. So that would eliminate certain extraction methods. Now we want to eliminate methods that would leave any kind of solvent residues in any great levels there. That's not safe. We don't want that. We also want to eliminate methods of extraction that would only take out a small fraction of the phytonutrient chain. In other words, imagine a

giant molecule, a polymer so to speak, and you're only taking out a certain level, or a certain slice. You know our bodies need more than that. We need the full spectrum. We are not going to play God and decide which cell needs what. You just get the full spectrum; therefore, we're able to access what each cell needs just like a prescription for every organ system in every cell.

As a formulator for Sunhorse Energy, I'll just explain this about many products in general. Over the years I've learned something that is just absolutely critical. I learned it from my mother, who is an herbalist. I started with her over 40 years ago. We are basically made of water. If you took every single molecule in our body and you said, "Water, water, water, water," you'd say water 99 times before you finally got to calcium, or mineral, or protein. You would say 99 times water. So we're basically water okay.

So if something is not soluble in our system, then it can't be bioavailable. The next level is that it cannot be bioactive. So what we take in as a CBD product to satisfy this endocannabinoid system, realizing that in our environment we are not getting this molecule into our system... Health is really perfect balance. That would be ideal. If you had perfect health, you would be in perfect balance.

Dr. Tom: Well you know the definition of the word health in the medical dictionary Dorland's, and this is word for word, "A state of optimal physical, mental, and social well-being, and not merely the absence of disease and infirmity." So you're talking about balance. Yeah. The optimal physical, mental, social. Yes. Balance.

Dan M.: Absolutely. So you know we have to look at CBD for what it really is and what its main function is. Its main function, I feel, is that it helps us achieve this state called homeostasis which is balance. So therefore it doesn't have any great noticeable effects. It's not a stimulant; it's not a depressant. It's not a lot of things that have these marked polar opposite effects. What it does is it helps us feel good. Whatever good is. Whatever your best day that you've ever experienced is.

So we all know what that best day is. We would like to experience our best day everyday. That's ideal. So we do need to supply our body with things that are not being supplied in the commercial world generally and in our environment in particular. So in this case we have to literally go out of our way, make a conscious effort to supply this endocannabinoid system. We want to supply it with a full spectrum product that is highly soluble, extremely bioavailable, and of course bioactive.

Now this brings up another point, and you touched on it Dr. Tom- this bioavailability or this delivery system. Now for about 40 years I've been working with a class of herbs known as adaptogens, and I'm absolutely convinced that of all the classes of herbs in the world out there that could benefit the most people under almost any circumstance, it would have to be adaptogens. And I'm just so fortunate that my mom was teaching me the method of quantifying and understanding herbs. It was such a laborious process. It took one year for one herb believe it or not. How many years are you going to live, and how many herbs will you really know at that level?

So she said, "You're right Dan. You're going to have to pick a class of herbs and become the best or the only in that class. You might know other ones, but that class will be your specialty." So for whatever reason I chose adaptogens because I was really intrigued with the research done by the various researchers that have gone before me like Dr. Selye, Dr. Nicholas Lazaroff, Dr. Panossian, and Mr. Wickman. These are people that have just spent their lives discovering the benefits of adaptogens. Stress, modulating factor, the hormone

modulating factors. Mainly the cellular integrity increases that occur when you apply adaptogens to a person's system.

So what I like to do, is I like to maximize the histological momentum of what we're trying to do. So if anything has a direction ... Herbs have a direction. We're talking about CBD today. So we're talking about this balance. We're talking about filling these receptors. We're talking about the various benefits that happen within our system when these receptors are satisfied. So that's, you would have to say, balance. Well there is no other class of herbs that is directly towards balance more than the class of herbs known as adaptogens.

So Sunhorse, that's the company that I formulate for, which Dr. Tom is a very important partner, the class of herbs of adaptogens, we couple that, we partner that, we entrain the adaptogens in a specific way. This is part of our technology, our adaptogenic resonance formulation or global resonance formulation. These are trademark terms. To really show what's going on here.

We entrain those adaptogens, and we put the CBD molecule as the tip of the spear. And when I say that, we're trying to drive that CBD to its target which is pretty much every cell in our body. We want to do it in such a way that the cell is ready. It's like someone bangs on the door in the middle of the night, and you're not ready for that. It's startling. Your adrenaline goes up, cortisol flies off the handle. You might not even be able to get back to sleep. Okay. So it's kind of the same thing. We don't want to shock our system. We want to put the CBD molecule, entrain it with a class of herbs in the proper order that we do within our formula, that will allow that CBD molecule to do the absolute most benefit. It actually is the tip of the spear in a kind of propelled direction.

So that's basically what I recommend, and after 40 years of working with herbs and putting them as the tip of the spear so to speak, entraining them with these adaptogens, that's what we do.

Now getting back to the CBD. It's very important that people understand that it is like you mentioned. It's not a magic bullet. It's not a cure all. But it is critical. It is important to put it into our systems.

Now I will talk about a personal experience. My daughter, who was a national champion in judo, trained since she was about five years old. She was an extremely physical person with a great attitude. She was diagnosed when she was 13 years old with a condition called a complex seizure disorder.

This means it not only has a physical manifestation to seizures, but there's also a mental component of some factor. Now I'm not an expert on this, but I can tell you what I've seen. So at 13 she was diagnosed with this. Her room had all these little white things glued to the ceiling. It was kind of weird. They were little white round things stuck on the ceiling. I didn't even know what they were. And I asked her one time, "What are those white things on the ceiling?" And she said, "Oh those are the caps to my drug bottles that I take for the seizures." And I'm like, "Oh my god." I mean the whole ceiling was filled with these things.

And so I just went, "Oh man. This is not good." I mean I just knew that was not where I wanted her to be. So I put on the front burner of all the things I'm working on as far as formulas, I said, "I've got to find something that works with that." And let me tell you right now, that's years ago. And her seizure disorder, which is a very serious situation, and she does not have a driver's license. They won't give you a driver's license with that condition. So she takes Uber everywhere. She's the Uber queen. But the bottom line is she does not

have seizures anymore. And her condition has been ... It helped in orders of magnitude and cut the drugs down to virtually none. The bare, bare minimum on the strength of adaptogenic powered CBD. That's what it's done.

Dr. Tom: So Dan I've got a question now. And I know your daughter, and love her, and it's been great to see the results. So I mentioned earlier this is the wild West out there for people. They're trying to figure out what to do. How do you tell what a good CBD product is? And merging CBD with adaptogens as the delivery system makes it so much more effective to get into the cells, how can people tell? What's a good CBD product?

Dan M.: Well I think our product is the best, but I'm not going to go into that.

Dr. Tom: As do I. As do I.

Dan M.: My purpose in life is to help people. So obviously I would say, without talking about Sunhorse right now, we're talking about the general classification. So a good CBD product, let me explain that. First of all you have your CO2 extraction, olive oil or lipid extraction, dry ice extraction, ethanolic extraction, and your glycerin extraction. Then you have solvents like butane, hexane, and whatnot extraction. Okay so there are lots of variations on what is the best CBD. And then you get down to the solubility, the bioavailability. People are really, really lucky if they get something that has got to satisfy the kind of criteria that I would qualify the CBD. Now first of all, like I said, all CBD is not created equal. Let me tell you. It's a plant. Right? It starts in the soil.

Don't let anybody kid you. They can talk about extraction methods all day long. But where does the molecule come from, and where is the power, the real power that's going to help our bodies come from? It comes from the soil. So let's say right now, up front, when I research a source for Sunhorse Energy, where I start is the ground. The soil. I want to see how they care for their land and how they care for those plants. That's critical. It has to be organic. It has to be completely within my understanding of how cycles of nature actually work. You don't mine the soil. Unfortunately our whole world is into mining this Earth. We just take out. We don't give back.

That is not the way to health, and obviously as humans we're suffering because of this. The next thing is what plant are you putting in the soil? Now that's where you get into genetics. Okay. So as an ethanol botanist and person that studies plants and people, and people and plants for over 40 years, this is a very critical point. Now there are many strains of hemp that produce various ratios of molecule. CBD in this case right? In relation to the THC.

Now I would tell you we don't obviously want anything above the legal amount of THC allowed. Man has selectively bred the cannabis plant to the point where the ancient indigenous cannabis plant that lived for millions, and millions, and millions of years on this Earth, we hardly even know what it was. It's been bred so much by man. It's been so much a part of the human experience.

So the THC levels have been manipulated through breeding. Now we're actually trying to reverse that breeding and bring back the CBD. So if you can believe that's where we are now, we're actually trying to undo thousands of years of manipulation. The basic hemp plant is pretty much as close as we're going to get to the primitive, natural plant that our endocannabinoid system was structured to receive.

Now there are some strains. Like the Israeli strain, Avidkel. I am a big fan of Avidkel. They have done probably some of the most significant breeding in the world today on cannabis and on hemp. The hemp plant.

Canada also has the Canda. Canda I'm also a very very big fan of that genetic model because it produces more. It has more biomass. However, it can tip the scale slightly towards the THC. Just a little bit. You can hit the threshold there. Let's put it that way.

So what I find is a hybrid between the Avidel, which is kind of a deserty sort of plant. A little less biomass but very much is almost nil, just right out the barrel, right out of the plant, no THC. Very high CBD, very bioactive. Extremely good medical grade. And then you mix with Canda, you'll get a little more yield, and that's a very good genetic start. There are other ones, I won't go into all the numbers. It's just not worth it.

But the point is, the soil, the plant you're growing on that soil, and then how you handle that plant, or process that plant, extract those elements, and then you get to me or to someone like me, a formulator that takes that and uses that ingredient, we'll call it the CBD ingredient now. Carefully in a formulation. Unfortunately, most of the things that we experience in our world are the result of many economic filters. Like someone starts out with a great idea, and they realize pretty quickly that it's kind of expensive because you get what you pay for. So if you do have a really good idea, and you do it just perfectly with no regard to cost, it's going to be a great product, but it's going to be kind of expensive compared to these other products.

So it's been kind of a race to the bottom in all kinds of supplements, and even foods you know. Sort of race to the bottom as far as price is.

Dr. Tom: So to a formulator, the source is critically important. And as we all have heard, the CBD market out there is a billion dollar industry now, and these major corporations are spending hundreds of thousands, and millions of dollars to grow crops that are not of the highest quality. The sourcing is not important. It's the volume.

Dan M.: That's what I'm trying to explain- the economic filters. So when you have corporate America, and you know it hits the stock exchange and you have Wall Street investors investing in something, look at what they've done to our food supply. That's all I need to say. Take a look at our food, and just ask yourself a simple question. Does a tomato that you pick up in the store at Safeway or any other store, I'm not picking on Safeway. But any store. Just pick a supermarket. Pick up a tomato, and do you really think that tomato taste as good as the tomato you would grow in your garden, or that your grandmother might have grown in her garden? I can guarantee you way different.

And so what we're trying to do here, (We should be trying to do this with our own personal health.) is we vote with our dollars. That's what we do. I mean you may vote on a ballot somewhere, and you may get somebody you like, and you may wind up with somebody you don't like. That's not the problem. The problem is we vote with our dollars. And so we need to reward, with our dollars, companies that care enough. And I will tell you right now, I might be a bit of fanatic about this, and I apologize. But I have been on airplanes and flown thousands of miles to look at the soil, look at the plants, make sure that it's done according to my standards before we will accept a source.

Dr. Mary: The thing that I love about the entire conversation is that it really embodies my lifetime of work thinking about food not only as a macronutrient or a micronutrient, a carbohydrate or a fat, or a good source of vitamin D, but also thinking of the food as emerging from the soil with a grower, with a farmer, and honoring the farmer. So when you're choosing a CBD product, it is really critical that you honor the farmer. That you truly do you see, and that's so impossible to do.

So you know, when you're buying your foods, you have to identify a few farmers that you trust and bring them into your circle. And that's what Dr. Tom has done for you here, working with Dan. It's a fantastic company for that reason because they vetted your farmers. And it's a sacred plant. Dan, just so brilliantly, and eloquently laid that out. That this isn't something that you need to be afraid of, or be embarrassed about. This is a sacred plant that has been around, and at least within literature that we can identify, for 3000 years of human experience. So you're not putting yourself in a position of doing something that's scary or something that's modern and isn't well understood. These are sacred plants that have been around forever.

And then in addition, the people that are really on the cutting edge are not just giving you 40 different ways to administer your CBD oil, through a patch, or any emollient. But Dan, I want to talk to you about what you have in your store of various products and modes of delivery for CBD oil. And that may be valuable to have various modes of delivery, but the most important thing is that all the people who are really thinking and working hard for you are doing this great idea of adding adaptogens, adding other products that are going to work to make the CBD oil even more effective for you.

Dan M.: Absolutely.

Dr. Mary: All the tools you need herbally. So it's a very exciting company, Sunhorse.

Dan M.: Well Sunhorse has been around. Well the little horse on that thing, and people always ask us about that. But that's a real horse. As a matter of fact, we're on my ranch right now, and that animal is on there for a reason. And you know the power of a horse, and the power of the sun, has been very symbolic in my life for a long, long time. And you know in memory of my mother, who was a wonderful person in every way, but her ability to work with herbs, and create formulas that helped people. I grew up in that, and when you're young, you don't appreciate your parents when you're a kid unfortunately.

You just don't get it. I was born in this house. You know, my mom's an herbalist. Women came over all the time. My mom's specialty was women's herbs or herbs that would help her preparations, would help women with their problems. Of course as a young guy I mean I had no clue what she was doing.

Dr. Mary: Right.

Dan M.: Nothing matters to you until it reaches you personally. I have this herbalist mother who's just been doing her thing since before I was born. But one day I'm down in mainland Mexico surfing, and I almost die. Literally, I could not breathe. Anaphylaxis from a simple scorpion that stung me, which turned out to be an extremely bad one. And I got whacked by this *centruroides sculptratus*. It virtually shut my lungs off.

Dr. Mary: That's a name you won't forget.

Dan M.: No. It shut my lungs off. Couldn't breathe. And so mom's not around. I have no herbalist mother hanging out, nor do I have a doctor. I'm in the middle of nowhere in Clasico, Mexico on the coast 20 miles from the nearest town. So I'm going to die. Straight up. Except for one little thing. This little fisherman guy who happened by chance to be spending the night in our surf camp because he didn't want to walk through the jungle at night. He got a little late. He runs off and finds this little Indian guy who brings back a plant, a root, made some kind of water concoction very quickly. I didn't see him do it. Next thing you know, I get it down my throat, and within a minute I could breathe. And let me tell you

something right now. When I say a personal thing, you don't get any more personal than being able to breathe.

It was like an elephant got off my chest, and I was able to take a breath. All of a sudden I had this huge epiphany, after I recovered a day or so later. It changed my whole life. My whole life was never the same from that moment on. And my girlfriend will tell you that. She was looking right at it. She couldn't believe it. But all of sudden, it dawned on me what my mother was able to do, and I went to her humbly. I was not a humble person at the time. I went to my mother very humbly, and I virtually begged her to show me what she knows how to do it.

Dr. Mary: Well Dan I think that's true to the personal component of your having that experience. But also you know that this is ancient wisdom carried by your mother. It's so beautiful. But I think really the whole company is founded, primarily in the love of your daughter. I would just do anything for my children. It's ridiculous. They're the center of everything. And it's wonderful every moment just spent with them. So to know that your Sunhorse, the building of the CBD around the seizure disorder, and Dr. Tom I want to spend a few minutes talking with you more about seizure disorders because that's such a critical thing, but building it around your daughter's seizure disorder. That's just so utterly beautiful and so full of love.

I love that part of the story almost even more than I love all the farmers. And I love farmers.

Dan M.: Well I hope you get to meet Mikayla. That's my daughter. She's a wonderful person. And she has kind of like my mother's personality. She wants to help everything and everybody. Plants, birds ... My ranch is an animal rescue center thanks to my daughter. I'm not kidding you. I have animals here that would not have a home any other place. I mean, it's not even funny. But you know what she did, which I thought was impressive recently. Maybe a few years ago. I mean recently recently. She started to take Sunhorse from us, as it's here. I have quite a bit of it around. But it's very expensive, and we treat it with respect.

Well without me realizing it, she started to give it to my horse. Okay, which a horse is an 800 pound creature, and you have to give it a fair amount I have to say. But when I found out what she was doing, I was like, "What are you doing with the Sunhorse?" And she says, "I'm giving it to your horse." And I'm like, "Okay. Who told you you could do that?" And she's like, "Well I want to see what changes happen to her personality because she's super high strung, and no one can ride her except you. I just want to see what it does."

And I was kind of thrown back. I'm like, "Okay. Wait a minute. Now that's an answer that I can accept." I mean I was kind of a little chapped. I was a little irritated that she's putting some very expensive stuff in horse feed. But I said, "Okay. Mikayla, you know you kind of got me there. You're running an experiment? Is that what you're saying?" She says, "Yeah dad. I'm running an experiment." So I said -

Dr. Mary: I did the same thing with my dog.

Dan M.: The right horse. I said, "You picked a horse ..." She's so sensitive ... She's not mean. She has not a mean bone in her body. But she's so sensitive, and so powerful, most people are afraid to get on her. And she is very much a rider's horse. You can't get on this horse if you don't know how to ride. Well anyway, I let my daughter administer Sunhorse adaptogens to this horse. And I will tell you, this is the absolute God's truth, I've never seen such an amazing transformation of a creature's ... You know there's no placebo effect with animals. I mean they don't know what you're given them. You're just giving them -

Dr. Mary: Otherwise too, Dr. Tom don't you think sometimes when a human is taking a product, and like they say, "Is my anxiety better? Is my anxiety better? Is my ... No it's not. It's not working," that sometimes you can override the benefit of a product just because you're using your supratentorial as we would say, like using your frontal lobe and allowing your brain to override whatever benefit you would get. Do you see that in your patients?

Dr. Tom: You bet. All the time. And I will wrap up what Dan was trying to tell us. We're just going to run out of time. I mean I can listen to Dan all day everyday because these stories are foundational. And this horse, this high strung horse, just calmed right down. And Dan was startled by that, that it just ... It works on 800 pound horses. So the idea of adaptogens just help you adapt to the stress of life, and when you put CBD in an adaptogen delivery system -

Dan M.: It's incredible.

Dr. Tom: The result is like nothing that's on the market. There's nothing that can get this done the way that these products can.

The Alchemist's Kitchen - Lou Sagar

Lou Sagar has a long history in building very successful businesses and now is working on a terrific project in Manhattan. Lou is the CEO of Evolver, which is a conscious lifestyle company.

About three or four years ago, I became quite inspired to revisit how conscious consumers were interfacing with our plants, with herbal and plant-based remedies, mechanical medicines. 60 years or so, we've had an herbal supplement industry, which has been very claim-based, not well regulated, and maybe also quite focused on vanity type of issues such as weight loss, muscle enhancement, and so on. I felt quite inspired to revisit the paradigm in which people use herbal supplements. This is an industry that has not been well regulated, and so it's very important that we put the trust back into makers and workshops that produce really terrific products in the marketplace.

The Alchemist's Kitchen was first among some really beautiful, innovative shops in our area of Manhattan. The Alchemist's Kitchen is the name of our space, and it was birthed to put the consumer into a relationship with plants. First, education- we have 20-25 workshops and classes a month, which range from herbalism 101, just to learn what an herbalist does to how to actually use plant-based remedies. We are the leading destination in New York for non-psychoactive cannabis, commonly known today as CBD, the non-psychoactive compounds.

We pride ourselves on the sensuality that we get from plants, which is purification of space, using essential oils for healing, and the space down in Lower Manhattan is our incubator where we can really engage with the consumer. We get a lot of business intelligence. We can really understand the trends of what the consumers are looking for. It's very exciting. It's a very exciting time as we move people from claim-based thinking into intention-based

thinking. The very, very important shift that there are no cures. We don't want to make claims that we can't back up. We want transparency. We want the consumer to understand where these herbs and plants are coming from. We are putting a lot of trust into herbalists, who use private label products for us in different locations around the country.

A lot of the herbal products that people are using now are specifically formulated for a certain outcome. Like if you want to lose weight, there's a combination herbal therapy, or like muscle mass. But what about moving from a claim-based a little bit more?

We've been incredibly conditioned to believe that there's nothing wrong with us, but when there is something wrong with us, we go to the doctor. We get a prescription. There's a diagnosis, and that's the experience.

We've all been tricked into an over dependence on pharmaceutical and prescriptive medications. There's tremendous importance to that, but we've completely lost the balance, which is I commonly use the phrase, "Grandma had the medicine. Our indigenous roots, they had the medicine. Mom took us to the doctor." That's been pretty much the experience we've had the last 60-70 years.

It's time for us to get back to realizing we can't always have the perfect solution in a minute. Good health and wellness takes a little time, and you need to interface with plants with intention. So if you want to sleep better, yeah, here's a sleeping pill. It's going to put you out, but you're not really sleeping better. You're not really getting into that experience of a deeper sleep, better dreaming, better health, or better happiness.

So we used this gift into intention, which helps the consumer just relax. The patient, the client to "relax into" with plants in a different way. Just that alone is already a step towards a healing process for people.

I think another important point is we're farm to pharmacy. Our attitude is that. Let's take CBD, that's such a popular topic. A lot of people have interest in that. When you work with medical cannabis, it's important for people to understand a few things. One is that when you're farm to pharmacy, you are vertical. So we go from seed to flower to cultivation to harvest to extraction, which is taking the plant after it's been grown and formulating for different purposes. So if you're going to put it into a beverage, it's one type of thing. You can put it into an edible. It's another. It's just going to be consumed as an oil. It's another way.

We are stewards of our CBD program from start to finish.

We know our growers. We know if they're applying excessive pesticides. We're starting right at the beginning, which is really critical. There are people who don't know their farmers. They really don't know their product.

It's very important that we educate consumers that not all CBD is created equal. CBD is exceptionally good today for everyday stress, which many people are experiencing all the time. Stressful moments. Stressful moods. Anxiety is more physiological. If you're not

worrying about this, you're worrying about something else. CBD is extremely good for relieving anxiety. And it's extremely anti-inflammatory, which is when you take it, it will reduce inflammation, which is very often a cause of pain.

There are over a hundred cannabinoids. The major ones with benefits or effects on human health are the CBD and THC. THC is also very helpful, but has the psychogenic effects where you get high, where you have the feeling of getting high. CBD has all of the healing and anti-inflammatory effects that have been attributed to the whole marijuana plant, but without that psychogenic high effect. So you get the relaxation and the muscle relaxation and reduction in seizure and all kinds of anti-inflammatory effects without the psychogenic effect. So for a lot of people who were worried about that getting high or who were worried about testing positive on a drug test, CBD oils are just outstanding alternatives for them.

I've created a lot of products through this company where we mix other products with CBD to maximally optimize the herbal benefits.

It's very important that we help our audience and really emphasize this is a movement; it's not a trend. It's really a movement to what we, at The Alchemist's Kitchen celebrate, which is plant-based wellness. That, obviously, starts with food, improving your diet, and all those important things around food and health. Food is medicine, and the greater influence of trying to eat more and enjoy more plant-based foods.

The CBD is going to be a profound influence on this shift to an intention-based relationship with herbs and plants, and CBD is also very important because it's going to become a platform where once you're producing high caliber, high quality CBD, you can pair it with other herbs. For example, for sleep, pairing CBD with a skullcap, which is a very magical, lovely herb and will enhance the benefit towards sleeping better.

So as CBD matures and we have more capacity to grow it properly, we'll start to see CBD interfacing with other herbs produced so that the potency and the intention will be even more specific than it is today. Lots of very exciting trends that we can look forward to.

It's also important that much like the wine industry, this kind of helps people get a context much like the wine industry. There is CBD that's like table wine. It's not high potency. It's diluted. It's often sold at a lower price. You have to use a lot of it to get the impact, and it's often coming from the parts of the plant like the sticks and stems of the plant not the flower. In America though, we're beginning to really do Cabernets and Pinots. So many different varieties of CBDs growing, but the underlying benefit is the full flower. So the entire plant is grown with nothing psychoactive. You can't get high on it, but because it's the entire plant, the benefits, the potencies of the CBD are that much more dramatic. That's what's starting to happen where people can really feel, "Wow. This is reducing my pain. This is making me feel more relaxed."

I love exploring the possibilities of uses for CBD, like CBD for your pet. 70% of the dogs in America who are the most loved companions in the family are an older age. They're cranky,

and they have mood issues. They have arthritic issues and muscular issues. They don't just run around like you remember them when they were little puppies.

You're going to see more and more opportunities to purchase treats and edibles for pets and oils. We have a terrific line ourselves, and we're developing more vertically our pet program. But we often say at The Alchemist's Kitchen, "Okay, you don't think you're ready for CBD," or "It's all fine. Why don't you test it out on your pet and see what happens?" The results are quite extraordinary.

Animals really get a great response to it. Now, the pet market is very good, and people may be wondering, "Hey, I'm going to now go to the pet store and see. Where is the CBD?"

You're not going to find it yet in too many locations because the pet industry is extremely conservative, and in most cases still nervous about the legalization in terms of transacting in the world of cannabis and cannabis plants. It's important for people to realize that because of the states and the federal laws, there's a very, very nice, slow but steady progression to complete legalization.

CBD is legal to be sold in all 50 states.

Safe and legal in all 50 states. The nuance there is that the federal law requires you to extract it from hemp, which is the industrial definition of the non-psychoactive. So when it's not psychoactive, it's often called hemp.

Industrial hemp is designed mostly for fabric and for animal food, as opposed to other strains, like indica and sativa. That's where it's a little bit difficult for consumers to differentiate between CBD that's produced like industrial hemp, which often comes from the byproduct of the flower, of the plant, and full spectrum, which is where CBD is the most effective and is still classified as hemp, but you wouldn't know it on the label. You have to be asking that question, "Is this full spectrum or not?" Even industrial hemp will have some benefits, but if you really have serious pain, really chronic pain, or you're really dealing with the use of let's say chemotherapy and recovery from serious illness, you're probably better off with Dr. Mary. Talking with her about getting medical marijuana access, which allows you to go and purchase in the regulatory, the regulated dispensaries to be able to get THC with CBD, other kinds of mixes.

But the CBD market, which is not regulated, and legal in all 50 states, is advancing quite quickly to be able to provide many of those benefits. But the fact is that in instances where people are really struggling with very chronic pain, it is likely that they need more medical marijuana than just medicinal CBD, and that's when they should consult a physician.

There may be some potentiation of the CBD with the THC. There are different cannabinoids. Sometimes the use of the whole plant is going to bring other products in that are going to have an effect that we probably haven't thoroughly studied yet or thoroughly understand. But a whole plant product also carries its own value.

So it's very, very important, and thankfully, at The Alchemist's Kitchen, we're very dedicated to education. That's the future, and we really encourage people to ask the herbalist. Ask your doctor. Get educated. There's a huge increase in people searching and seeking information to this question.

I believe that the future, too, is collaboration between the medical community like and progressive leaders such as Dr. Mary, and those like myself that are just trying to obviously be in business and create livelihood for a new community of people that want to be in the industry of plant-based wellness. It's a very exciting time. We're very, very open and inclusive with both of our community of customers as well as our network of experts, such as yourself.

TheAlchemistsKitchen.com is our website. You can always email me at Lou@Evolver.net if you have questions, and I can guide you to an herbalist who can reach out and help you.

We also have an app, "Ask the Herbalist." We're getting over 100 inquiries every week right now. We just launched. So people have questions, and it's very important that we have an environment where they feel safe to ask those questions and get answers.

If you get in and look at The Alchemist's Kitchen and you have a certain product in mind and you don't see it, save it to your favorites and go back and look at it because there are new products launching all the time.

The Alchemist's Kitchen is always cooking up something new just for you.

Lou Sagar

Please Click Below For Your Bonus Gifts:

"Infused Smoothie Recipe Guide - Cannabis & CBD Oil" and
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Chapter 2 - Who's Winning The War on Drugs? **(Legalizing and Decriminalizing)**

Bringing Mind and Body in Balance: The Endocannabinoid System

You'll notice throughout this book that I mention the vital importance of research often. One great example of this is the discovery of the endocannabinoid system. We want to think that we know everything about our own anatomy, but the discovery of this system is a perfect example of the opposite. Dedicated scientists are always finding out new things about our body, even when the government prevents them from doing so. An imposed prohibition tried to keep researchers from working with marijuana and finding out the secrets it may hold for the body, and this is why it took us so long to find the hidden gem of the endocannabinoid system.

You're probably wondering, if this system was so important how did we not know about it?

Well the endocannabinoid system is partially responsible for homeostasis. Homeostasis is directly defined as stable equilibrium, for our bodies this is when we have nothing that is

going wrong, down to cellular level. That's fairly important. When something does go wrong in your body, receptors work to "fix" the problem, receiving hormones to restore balance.

Your body naturally makes two major endocannabinoids: 2-arachidonoylglycerol (2-AG), and anandamide. The cannabinoid sites receive these hormones. These two hormones are interesting as they are in a way the human equivalent of THC and CBD. These natural hormones are responsible for plenty of the things we feel in our day to day lives. One of these feelings is the feeling of euphoria that comes with exercise. We must have known about this on a subconscious level, because colloquially the feeling is known as a "Runner's High"

Endocannabinoids and their receptors are found throughout the body: in the brain, organs, connective tissues, glands, and immune cells. Research indicates that when you have small doses of cannabinoids from cannabis, it may instruct your body to create new areas for cannabinoid receptors.

When you examine the variety of ailments that medical marijuana has been associated with, this may explain why medical marijuana can be beneficial to such a wide assortment of medical conditions.

You have different types of receptors in your body. It is suspected that there are more cannabinoid receptors than any other type. Two different ones have been identified: CB1 and CB2. It is believed that there is a third, but it has not been discovered yet.

CB1 receptors mainly deal with the central nervous system. When you activate the CB1 receptor, benefits include stress management, regulating anxiety, an increased appetite, decreasing symptoms of nausea, balancing your immune system, and inhibiting growth of tumors.

CB2 receptors are predominantly found in immune cells. When you activate these receptors, you reduce inflammation and heal damaged tissue.

Once your body has returned to equilibrium, producing endocannabinoids are no longer needed. Metabolic enzymes come in to break down everything and degrade those materials, since they are no longer needed in your body. Balance is restored.

This amazing communication system that your body has to promote healing may actually be why your state of mind is important in healing.

Now that researchers know that we have this system, they are able to do more research to drill down and find solutions to a wide variety of illnesses. AND we can better understand the mechanics of our own bodies, which always helps us when trying to determine what avenues to take in improving our overall health.

One Girl's Fight to Legalize and Destigmatize

Alexis Bortell grew up in Texas. In 2013, at the age of seven, her active childhood came to a sudden halt when she began to suffer from seizures and was diagnosed with a severe form of epilepsy. She was told that until her seizures were under control, she couldn't swim, use the stairs, or ride her bike. Seizures drove her into the school nurse's office nearly daily, and a seizure buddy was provided to make sure that she stayed safe and helped to get aid in the event of a seizure. Despite the flurry of medications, the seizure activity continued.

Then one day her mother watched a video that posed a different idea; a treatment not offered in Texas. They flew to Colorado to talk to doctors to see if this treatment would work for Alexis. This treatment was the use of medical marijuana. This is where the issue brought itself to life- Marijuana of any form was illegal in Texas. Alexis and her mother met with the politicians in their home state, trying to spark a discussion on the difficult issue of dealing with her medical problems and staying within the laws of their state. Their response was bone chilling, the politicians had moral concerns.

Imagine that! Offering medical treatment to quell seizures is a moral concern, and your politician needs to approve your medication. That was the case for a child suffering with life threatening seizures. I have to contest their concept of morality. I personally feel it is a moral obligation to offer treatment to a sick child whenever you are able. To knowingly allow how to ease suffering and not allow it, now that defies morality.

In 2015, following her most dangerous seizure, it became medically necessary to move to Colorado to get the medical care needed for Alexis. Her seizures were life threatening, and her family was desperate.

While Alexis was now able to secure cannabis oil, otherwise known as Haley's Hope, they continued their fight to make this treatment available to anyone who would need it for medical purposes. But the hurdle they needed to overcome was clearly evident: destigmatize preconceived opinions about marijuana, and get it reclassified.

"Team Alexis" was born. It comprised of people with various conditions that benefit from medical marijuana and would like to afford the same opportunity to others in their situation. She began fundraising efforts, speaking engagements, and launched a campaign to legalize medical cannabis on a federal level. They sued Attorney General Jeff Sessions and the DEA to reclassify marijuana from a Schedule 1 drug.

The DEA has 5 categories they rank drugs. The DEA says that Schedule 1 drugs have no accepted medical use and a potential for abuse. It is the strictest category available, including substances like heroin, ecstasy, and LSD. The federal judge dismissed the case because they did not petition the DEA first. Their fight continues.

Several states have broken with federal law and created state laws permitting medical marijuana. That now includes Texas. The conditions vary from state to state, and which form of cannabis is permitted varies as well. For instance, under the Texas Compassionate Use Act, residents who qualify for medical marijuana may use low-THC cannabis for intractable epilepsy. This is the only condition that qualifies, and it is extremely limited, but it's a start.

While many states are on board with allowing cannabis to be used for medicinal purposes, the federal government lags behind in reforming its laws. It appears likely that it will only happen through grassroots efforts, as the swell for demand and acceptance becomes more universal.

For updates on where your state stands, visit <http://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx>.

Masaya Means Happy

A dear friend of mine, Dr. Annabelle Manalo, developmental biologist at Vanderbilt University, welcomed her baby boy into this world a little over two years ago. Only two hours

after she brought him home, he began to have seizures. He had 100 - 200 seizures a day! Doctor's informed her that her newborn suffered a massive stroke.

After removing 40% of his brain, getting three blood transfusions, flatlining three times, and having a G-tube inserted, he still had seizures, and his medication left him in a zombie-like state. This was definitely not the life she imagined for her son when she brought her healthy little baby boy home.

Specializing in biology, Dr Manalo was keenly aware of our bodies amazing healing abilities, but watching everything he was going through did not feel like healing.

But she was in a unique position. As a government researcher, she had clinical trial certification, so she began to research cannabis.

That desperation from a mom loving her child and wanting to see him thrive led to what Annabelle described as "... the most passionate science research I've ever done in my life. In 15 years."

She threw herself into full-on research mode, learning as much as she could about CBD and the potential for treating epilepsy. She examined studies. She looked at everything on the market. She spoke with CSO's and CEO's. Eventually, it became crystal clear. While CBD could reduce the frequency and duration of his seizures, Annabelle wanted something that just wasn't on the market. She wanted a better form of delivery, higher potency, and better transparency that allowed you to know exactly what you were getting- before she put anything into her baby. So she created her own.

She did not want little boy to have a psychoactive substance like THC and wasn't comfortable giving her baby any of the lesser researched cannabinoids, so she made her product 99% CBD extract. She developed a patent-pending formulation using a medium for delivery that accentuated neuroprotective. The effect could be seen more quickly and have an even greater impact.

And it did. Within the first week of giving it to her son, his right eye slowly came into view. He began to reach for things with his right hand. Eventually, he was able to eat normally. Her son was never expected to be able to walk, but he can. So many things that he was never expected to be able to do, suddenly began to happen.

But while this product that she created for her son was helping him, she knew she was not the only mother with a child who could benefit. So she decided to turn it into a company.

As a clinical researcher, she knew that if anyone would ever look at this as a pharmaceutical, phase trials would need to be performed. Because her formula is 99% CBD and doesn't include other cannabinoids, this would help researchers isolate and understand exactly what interactions are going on in the body and better understand its components.

She named it Masaya CBD. Part of the mission with Masaya World is to promise that every person that needs it, has access to it. So she started a program called Masaya Cares. With every sale, she gives a free bottle to someone who may need CBD but can't afford it.

This has been a huge blessing for her and her son. That's why it is called Masaya- because Masaya means happy.

Since leaving Canada at 17 to pursue a basketball dream, Annabelle Manalo now balances life as a mother of 4, scientist, and educator. The dynamic life experiences that encompassed her journey has sparked an entrepreneur side and a need to help others.

Annabelle was a 4-sport captain graduating with a 4.0 gpa out of high school. She ended up playing college basketball for Dillard University in New Orleans, winning 2 conference championships. Unfortunately, Annabelle did not get to play her senior year as Hurricane Katrina had hit at the start of the season. She finished her bachelors degree in biology from Eastern Kentucky University with honors. Annabelle was an assistant coach for the Nicholls State Women's Basketball team the following year but did not sign on the next year because she felt that her mission as an individual was to reach out to a broader and larger audience.

In the following years, Annabelle turned down an offer to play basketball overseas and focused on charitable work for NFL organizations while shadowing various physicians looking to further her education. She started her graduate work at Georgetown University in Neuroscience where her research focused on the partitioning of the thalamus by the Eph-Ephrin Receptors and Ligands. After 2 years, Annabelle took a short time off to be with her father in Canada who was diagnosed with cancer. It was at that time when Annabelle realized her purpose in helping people. Annabelle's father beat all odds and was completely cured of cancer with natural eating and practices. She returned back to the United States and completed her PhD in Cell and Developmental Biology at Vanderbilt University in Nashville, where she now resides. Annabelle has presented and published on the developing mesothelium and the cardiotoxicity of chemotherapies and genetic factors. She has also obtained a clinical trial certification.

During her training, Annabelle experienced life-changing personal trauma that shifted her focus towards alternative medicine and natural health consciousness. She has dedicated herself to educating individuals on the complexity of disease and encouraging healthy lifestyle habits. Now, she plans to educate the world on the benefits of CBD through the launch of her product, Masaya. Masaya is scheduled to undergo clinical trials this summer.

Oliver: The 14 Year Old Who Inspired Legislative Change

Oliver Miller suffered a stroke in utero, resulting in a brain stem injury. Severely handicapped, his medical conditions left Oliver, at the tender age of 14, addicted to Benzodiazepines and Barbiturates. Among those medical concerns is intractable epilepsy. Oliver's seizures do not respond to medications on the market. His mother, Missy Miller, feared he might not make it to adulthood. For someone like Oliver, time was of the essence.

So she and other parents took the spotlight off of the stigma and redirected to where it needed to shine: their children with disabilities. Forget partisanship. Forget the conjuring thoughts of hippies in the 60s. Forget worrying about how it will look during that next campaign for re-election. Look into the eyes of the child who can't speak for themselves. Who will speak for them?

Well the parents allowed the children's disabilities to speak for themselves. And the parents spoke as parents who were forced to sit by and watch as their children struggle when help was being withheld because of propaganda and political games. While politicians played

these government games at the sake of public health, those children's interests remained unserved.

Missy brought Oliver to meet with New York Senator Dean Skelos, who represented her district. She even launched a local commercial campaign begging to Vote for the Compassionate Care Act. She continued her fight all the way to Albany.

The Compassionate Care Act passed on June 20, 2014 and was signed into NY State Law by Gov. Andrew Cuomo on July 5, 2014. New York became the 23rd state to legalize medical marijuana.

Missy was so proud of her 14 year old son. Oliver had made such an impression on Representative Skelos, that Oliver convinced the republican to ignore potential political backlash and Skelos voted to help thousands of other children and adults in the state of New York. Finally, an underserved population was represented in their state.

While there are restrictions on which conditions a person must have in order to qualify to use medical marijuana, and it is not an all inclusive list, it has opened up opportunities for treatment for a range of people with serious medical conditions. And Missy and Oliver have every right to be proud of their piece in making that a reality.

One Doctor's Case for Medical Marijuana

If you want a clear cut example of survival of the fittest, go to med school. They quickly weed out the weak in the undergraduate and interview process. Forget weekends, parties, friends, or any semblance of a life. Your life is comprised of one thing: studying. After years of shutting out the world and focusing on a grueling curriculum, going through residency, and becoming a licensed physician, Dr. David Casarett was well versed in anatomy, systems, diagnosing, medications, and treatments. But after all of his rigorous studies, he had zero hours of information covering medical marijuana to show for it. And he isn't alone.

So when a 73 year old palliative care patient confronted him about cannabis as part of her treatment, he truly did not believe that marijuana held any medicinal properties. She began his education on medical marijuana- offering case studies, brochures, and a variety of literature.

That lit his interest.

What benefits did medical marijuana have, and is it a feasible option for his patients? He reverted to what he was so well trained in: research. What he found surprised him.

1. Unbeknownst to him, marijuana had a variety of medical attributes.
2. Although fewer, marijuana was not without its risks, despite what some overzealous advocates may imply.
3. It appeared that one of the greatest benefits to the people he spoke with was that it gave them control over their illness. That was huge, especially when dealing with a population who were facing their own mortality and can often feel like they don't have control over their own health.

Little by little, research indicated the positive outweigh the negative. While it carried some risks, the risks were fewer. While it was not a panacea, it did help with a variety of ailments. And while he was treating patients who neared the end of their life, he could easily see that at some point in life, many of us will have a chronic illness that causes us to feel helpless.

For anyone currently experiencing this, you understand the frustration. For anyone watching a loved one suffer, you also have witnessed this. It's a horrible feeling, so being able to give a little piece back to them is a blessing.

So Casarett visited a dispensary to get a first hand look at what being a patient was like. Again, he was shocked by what he found. In a day and age where customer service can leave you wanting, here they took their time and asked questions. Here the focus wasn't "making a sale." This was all about managing your health and finding what you wanted, needed, and what was right for you and your situation. They were educated. They were engaged. They conveyed an interest in the patient walking through their doors. This was patient care at work.

Sadly, if you walked into a doctor's office or pharmacy, you would be hard pressed to get that same attention. There is a lot that can be learned and implemented in medical care from what is currently happening at these dispensaries.

That day that 73 year old patient walked through Casarett's doors has completely shifted his mindset. As more and more physicians are educated about medical marijuana and are able to witness first hand the benefits it brings to their patients, it continues to gain acceptance in the medical community as one more option available in patient care. "A 2013 survey in the New England Journal of Medicine found that nearly 8-in-10 doctors approved the use of medical marijuana."

There is a learning curve on a lot of levels. But education and continuous quality improvement is always the right direction you want to be headed, and things are thankfully headed in the right direction.

Rehashing the History of Hashish

The more things change, the more they stay the same... When you look back to marijuana usage over the thousands of years, it was commonly used for a wide variety of things. For instance, for 40 years, Sears-Roebuck sold a very popular candy considered to be harmless- a maple sugar hashish candy produced by the Ganja Wallah Hasheesh Candy Company. Women in delivery used cannabis for pain management. People used it for spiritual practices. Turkish smoking bars were also very popular for recreational use. By 1839, hemp was potentially the largest agricultural product in the world because of its uses with fiber, paper, nautical use, lamp oil, food and medicine.

Kind Green Drugs cited "...that in 1860, for example, the Committee on Cannabis Indica for the Ohio State Medical Society reported and concluded that, "High Biblical commentators [scholars]" believe "that the gall and vinegar, or myrrhed wine, offered to our Saviour, immediately before his crucifixion, was in all probability, a preparation of Indian hemp [marijuana], and even speak of its earlier use in obstetrics."

So how did something so commonly accepted for thousands of years suddenly change in acceptability for so many? The same way we see it done now: rebranding.

They changed the name from hashish and hemp to marijuana. They created negative stories about "marijuana" and then attached it to something everyone would rally against, such as domestic violence. By using the unfamiliar term marijuana, they were able to suspend your pre-existing thoughts about cannabis long enough to reshape public opinion about the evils of this exotic plant that Mexicans were bringing into the United States.

From 1850 to 1937, cannabis was given as the main medicine for 100+ unique illnesses or diseases in the US. But from 1930 to 1937 a very active smear campaign began linking virtually every horrible thing to the word “marijuana”. Using the racial segregation and racism running rampant in the country at time, the smear campaign was effective.

Apparently not everyone got the memo though. For decades people fought to legalize marijuana, both for recreational use as well as medical use. Because of my medical background, I am always focused on the health and overall well being of each person. Here I will focus entirely on medical marijuana, and leave the recreational use discussion for another day and time.

Because the federal government drags its feet on this issue, whether it is because they “drank the kool-aid” or because they fear political repercussions, it has forced states to act locally on behalf of their constituents. And while you always want your local government acting in your best interest, you do not want it in conflict with federal laws. This is one of the reasons why you will still see the fight continue in states where it is already legal.

It's High Time NY Made it Legal

It is probably of little surprise that although 90% of all polled New Yorkers were in support of legalizing medical cannabis, there were a few key state senators that wanted to block it. Senate Finance Committee chairman John DeFrancisco (R-Syracuse) said the bill wouldn't even be put to a vote in his committee. The Food and Drug Administration had not deemed it appropriate for pain management. (Fair concern.) And he said there just wasn't enough research done to support it. (Not true at all!) The same day DeFrancisco made that statement, New York Governor Andrew Cuomo publicly showed his support for legislation. The war on drugs took on a new meaning that day in New York.

And sadly lives were lost.

The bill was signed into law July 5, 2014. It was designed to be up and running January 2016. Physicians needed to be certified. Patients needed to be deemed eligible. Dispensaries needed to be built, and the cannabis needed to be harvested. By August 14, 2014, a little over a month after the bill had passed, three patients with intractable epilepsy had already died.

New York acted as swiftly as bureaucratic procedures would allow. New York is the fourth most populated state in the country. There are 62 counties in New York. By January 7, 2016, they had eight dispensaries out of 20 planned. Finally some progress could be seen, but for many they were still having trouble locating physicians who were certified, or they were in a county or area that didn't even have a dispensary. And the law was quite restrictive on who would qualify, making access to medical marijuana still a difficult thing. Pricing was also a concern for others as insurance was not covering the medication.

Oliver continued his fight. Now 16, his area was not among the first to have a dispensary. But even more surprisingly, his own doctor was not signing up for the program they had long advocated for. Why? Fear of being listed as a certified medical marijuana practitioner bringing on an onslaught of patients all coming in with requests for medical marijuana. There was still much education, even to the physicians, that clearly needed to happen. In New York, certified physicians can choose to not be listed. This allows the doctor to bring it up with the their current clientele when they deem it an appropriate course of treatment.

But step by step, New York continued to move forward. Within the first six months of operation, over 5,000 patients and 600 doctors were in the program. By November, the amount of patients had been doubled and more than 140 additional physicians had been certified. By late March in 2017, just a little over a year after they first implemented the Compassionate Care Act in New York, the first expansion of chronic pain sufferers took effect. Later that year, they announced new regulations and added PTSD as a qualifying condition for use of medical marijuana.

Much like Oliver and his mother, Team Alexis, and Yuval and his mother, thousands of others have rallied beside them. And it takes that 73 year old woman to remind us, to lift that dark veil was placed over us, and allow us to look at years of data driven studies, and listen to the voices of patients. So state by state, the people have echoed the same concerns for public health over stigma. Little by little, we see support for these programs exploding. Patients, physicians, politicians, and parents are all rethinking what the term marijuana means to them, and for many it is a long awaited treatment for a life threatening, serious condition.

I feel privileged to be able to offer an alternative treatment to ease the suffering and give a little comfort and support where it is needed. For some, this treatment can mean the difference between life and death. For others, it can give comfort at the end of their life. And for others, it helps give quality of life where that may not have been an option in the past. So while there is still a fight ahead, every day brings people that much closer toward change on a federal level.

New York became the 23rd state to legalize medical marijuana in July 2014. A total of 29 states, the District of Columbia, Guam and Puerto Rico now allow for comprehensive public medical marijuana and cannabis programs.

For more information on New York's Medical Marijuana Laws, visit

https://www.health.ny.gov/regulations/medical_marijuana/about.htm

Medical Marijuana, New York State

If you've been dealing with a life threatening condition like cancer, HIV, MS or ALS - also known as Lou Gehrig's Disease, or are facing a crippling chronic illness like Parkinson's, a spinal cord injury, epilepsy, neuropathy, or even PTSD, chronic pain or muscle spasms, you are dealing with one of the limited list of conditions that make you eligible for medical marijuana in New York State. I am Dr. Mary Clifton, and I am a board certified medical internist and MD. After watching a close friend, struggle with pain killers due to cancer and go through far too much pain before "giving in" and getting medical marijuana, I decided to step in and become a registered practitioner with the New York State Department of Health

I am able to certify eligible patients into the New York Medical Marijuana Program. If you are a resident of New York state and have been diagnosed with one of the qualifying conditions listed on this page, you may be eligible to receive medical marijuana to help ease your condition. Do not be embarrassed. This program is here to support you on your journey. Fill out the information below and you'll be led to a page to pay the \$150 consultation fee for my services. I will interview you and if you're eligible, I will put through all of the paperwork on your behalf. You deserve to feel as well as you can under whatever circumstances you're facing.

To your best life,
Mary Clifton, MD

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Chapter 3 - Legalization: The Impact and Effects

The Effects of Marijuana on Car Accidents

The legalization of medical marijuana has had both a positive effect and a negative effect when it comes to car accidents. How in the world could there possibly be a positive effect? That's an interesting one.

Because states with opioid problems saw a reduction in opioid usage with the legalization of medical marijuana. This does not show whether or not marijuana led to car accidents, just that legalization lowered the opiate related car deaths. This also implies that legal medical marijuana may be reducing the number of people taking opiates.

But this is a difficult one for people taking medical marijuana. Marijuana can change your perception of time, impair your attentiveness, slow down your reaction time, impair your judgement, and affect your coordination. Just like getting behind the wheel after drinking, you are impaired. And just like drinking and driving, driving under the influence is illegal.

But what if you took medical marijuana, are not currently under the influence, and they test you? That's where it gets tricky. You will test positive, and in some states, it is a zero tolerance policy. In essence, if you are on medical marijuana in a state that has a zero tolerance policy, it does not allow you to drive if you choose to take it. You will be considered under the influence- even if you haven't had it in days, as long as some remains in your system. And even in states where there is a limit, you could potentially test above the limit set. The best course of action to take would be to find out what your state law is.

Since they can only test for marijuana metabolites, not for inebriation, it is hard to know if people who had accidents that had marijuana in their system were currently high or had recently used it. That also makes it a little difficult to assess since medical marijuana legislation passed, how many accidents were actually a result of being high, and how many just had it in their system.

But in Colorado, car accident related deaths are down. Many other states who have legalized medical marijuana say the same thing. More people obviously are showing it in their systems since legalization, but actual deaths have dramatically decreased.

So while taking medical marijuana may pose concerns for the user and be an inconvenience legally, the impact of legalizing medical marijuana seems to be making a positive difference

Marijuana Legalization and The Opioid Epidemic

The opioid epidemic has recently been given a lot of attention in the news, and for good reason. The CDC reports that 66% of deaths due to an overdose are from opioids. An average of 115 Americans die every day from opioid overdoses. These numbers will only continue to grow as 200 million prescriptions for opioid painkillers are written each year, so the question remains...

Will marijuana be a gateway painkiller, or will marijuana prevent the need for opioids and lead to a solution to the opioid epidemic?

While marijuana is currently listed as a Schedule 1 drug, citing it has no known medical benefits, the Institute of Medicine acknowledged there was substantial evidence from numerous studies that indicate marijuana helps people with chronic pain. And it is often reported that opioids, which are highly addictive, may not be cutting it when it comes to giving enough relief.

So what has been the impact in states where medical marijuana has been legalized?

Well one study looked at just that. They studied all 50 states and compared deaths due to opioids in states with legal medical marijuana and states without. States with medical marijuana legalized had a 24.8% lower mean annual opioid overdose death rate when compared with states without legalized medical marijuana. Interestingly the longer the law had been in effect, the lower the mean was.

If you think about what that means, areas that are suffering with the opioid crisis that have not enacted legalization of medical marijuana laws, are pushing those rising numbers of deaths up. It suggests that offering medical marijuana could potentially reduce the risk of opioid overdoses by limiting opioids prescribed since marijuana could serve as an alternative form of treatment.

Opiate use wasn't the only drug use that went down. In states with legal medical marijuana use, there was a decreased use of anti-anxiety drugs, antidepressants, anti-nausea drugs, antipsychotics, anti-seizure drugs and sleeping pills. In 2013, Medicare saw a savings of over 150 million dollars. If all 50 states did this it was estimated there would've been a savings of over 450 million. Although it's hard to say because this does not take into account that the patient is assuming the full price, and insurance is not covering any of it. If it was federally approved, insurance would theoretically pay for it. So while I suspect you'd see savings, I don't believe it would be quite that much.

But if taxpayers can save that much money, and take a medicine equally effective with less risks, everyone should love that, right? Unfortunately not everyone. There are of course the obvious lobbyists- pharmaceutical companies who are losing millions to the benefits of medical marijuana. Others who help Big Pharma are police unions, private prisons, and prison guard unions. All people who benefit from the machine of illegal marijuana. They all continue to raise money from imprisoning marijuana users and keeping them in the cycle of the prison system.

But if they switched from opioids to marijuana, couldn't they just see a rise in marijuana overdoses?

The CDC doesn't think so. If the level of THC is too high it could lead to a poisoning but a fatal overdose is unlikely.

If you or a loved one is taking medical marijuana, or if you are considering taking medical marijuana, talk to your doctor and your local dispensary to find out more about what strains are available and which is right for you.

Will Big Cannabis Turn into Big Tobacco?

While the booming industry of medical marijuana brings great relief to so many people who suffer with serious or chronic conditions, it also has the potential to bring about some unwanted side effects. So let's talk about the potential.

Cigarette companies have always been boosting the amount of nicotine in their products, unknown to the users who have been struggling to quit. In a similar way marijuana has been bred to lower CBD but increase the THC. Both of these offer benefits but they're needed for different purposes.

For instance, if you are lethargic, the last thing you are going to want is THC. THC relaxes and helps with insomnia. It also carries those psychoactive properties associated with getting high. CBD is the yin to THC's yang. CBD counterbalances the psychoactive properties found in THC. While some properties are shared, others are specific to that compound. CBD works against depression and anxiety, things THC might not work for. When getting medical marijuana, you would really need to pay attention to the level to ensure it is going to offer the benefits you are looking for.

Addiction to marijuana is directly related to the amount of THC, how often and the potency. As cigarette companies are getting ready to include marijuana once it becomes legal in all states, it isn't a far jump to think they would breed marijuana plants with high THC and little CBD. The health industry does not want to inadvertently create an additional health crisis. Best practices for patient protection need to be at the forefront of the conversation to ensure that people win over payouts.

Another concern is as marijuana grows as an industry, how much power will it wield? We've seen big business stomp over the best interests of the individuals time and time again- pharmaceutical companies vs medical marijuana, oil industry vs the environment, and big tobacco vs public health. It is generally accepted among advocates and dissenters, that the larger an industry becomes, the more power it possesses. That could be an abuse of power. This has already started to become prevalent in areas where marijuana has been legalized. This can be especially frustrating as a doctor trying to get the most accurate information when outside influences impact studies. More research is needed on a non-bias approach, but when big money funds things, it can tend to not be as unbiased as you would like.

And what effect is expected on the tobacco industry? Don't expect them to take a hit. In fact, they are expected to benefit even if they don't sell an ounce of marijuana themselves. Why? Because many people who smoke marijuana concurrently smoke cigarettes. They are literally banking on it. Cigarette smokers are 10 times more likely to smoke marijuana than non-smokers. These statistics only increase as the smoker get younger. Smokers in their teen years were 50 times more likely to use marijuana.

Some people like to enhance their smoking experience by combining tobacco with marijuana for a longer smoke. To be blunt, cigarette companies are hoping that the more people that smoke marijuana, the more they will be likely to incorporate tobacco into their joints. Also some marijuana obtained on the street can be cut with tobacco, inadvertently exposing the user to tobacco. When the user is exposed to the tobacco, they're exposed to the nicotine, which is what could potentially get marijuana users addicted to cigarettes.

The problem with this is that the addition of tobacco increases your risk of respiratory diseases, addiction, and cancer. Smokers cut an estimated 10 years off of their lifespan, but if they quit before the age of 40, they can reduce that risk by 90%. So for people who add tobacco to marijuana, they are putting their health at risk.

Marijuana is a drug that has a lot of medical benefits. It should be treated as a drug that carries both wanted and unwanted side effects. Mixing it with other chemicals, including tobacco is unhealthy and should be avoided.

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Chapter 4 - Conditions and Cannabis

Living Comfortably Numb with Chronic Pain

Kelsey Darragh, BuzzFeed producer, suffers from a neuropathic, chronic pain condition known as Trigeminal Neuralgia, or TN. Said to be nicknamed the suicide disease because the excruciating agony would drive people to take their own lives, the pain has been equated to that of childbirth, severe burns, and the bite of a bullet ant. It is perhaps one of the worst pains a human being can endure.

As a teen, Kelsey smoked pot, but she quit after she began to have negative side effects. After multiple surgeries, expensive medications, therapies, treatments, injections, and acupuncture all left her still reeling from pain, she decided to revisit medical marijuana in hope that it may help ease her suffering. She began with a discussion with Dr. Tom Strouse at UCLA.

Certified both in Psychiatry and Pain Management by the American Board of Psychiatry and Neurology, Strouse also holds certification from the American Board of Hospice and Palliative Care Medicine. Strouse stated, "There's pretty strong evidence that whole leaf marijuana, or extracts of it, can be helpful for nerve pain, chronic pain, but specifically nerve pain is the strongest evidence."

So Kelsey nervously set out on her long, strange trip into the world of medical marijuana. Having never tried "flowers," Kelsey was excited to discover that it was the most effective out of all the methods with her chronic migraine headaches.

Topicals are a popular choice for people with neuropathy pain, so she used a roll on stick to relieve sore muscles. Kelsey reported, "My muscles feel so relaxed. I still have a lot of the

tightness where the nerve damage is. As far as the muscles in my actual jaws and temple, oh my god, it's like no amount of physical therapy has given me relief for this long.”

She found that vaping had the fastest impact on her pain. But when she tried tinctures, which were much pricier, they didn't work for her. And edibles left her high and unable to be productive, so it was not realistic for her lifestyle. Finally, she tried one last thing that's received a lot of press: Charlotte's Web. Wilbur wasn't the only one happy.

Kelsey found an alternative to prescription pills or opiates. After all the pain Kelsey had suffered throughout the years, all the surgeries, prescriptions, and treatments, this was a life changing experience. She continues to use the CBD roll-on and Charlotte's Web daily. This has given her hope for managing her chronic pain.

Is Kelsey's experimenting with the various forms of cannabis normal? To some extent. Patients need to start slow and find what works best for them, and sometimes that involves testing various combinations of CBD/THC or the forms you can purchase in your area.

So what makes marijuana such a great tool for pain management? People have natural cannabinoid receptors in their body. Marijuana stimulates the receptors that modulate pain. Because it has such great anti-inflammatory properties, as well as being a neuroprotector, it's an ideal candidate for managing pain. It even has a larger application for different kinds of pains. And if you can avoid opiates, and get a similar or even better outcome, medical marijuana can be the obvious solution for your pain management.

Dealing with Menstrual Cramps from Endometriosis

Endometriosis is when the tissue that lines the inside of the uterus also grows on the outside wall of the uterus. This tissue has a specific function during menstruation and still acts as it would if it were properly located. At the end of your period, it breaks apart and bleeds. When you deal with endometriosis the period isn't like this. There is no place for the blood to exit, leaving scarring and inflammatory problems.

Inflammation is the root of autoimmunity. Often you will see accompanying conditions with someone who has endometriosis. It can be difficult to conceive, and you can experience excruciating pain, especially during your periods.

Our body naturally produces endocannabinoids (ECS). Women with endometriosis have higher levels of these in the secretory phase of menstruation than women who do not have endometriosis. The secretion phase is when the most pain and cramping happens. During this time, patients with endometriosis express fewer cannabinoid receptors, CB1 and CB2. The more endocannabinoids a woman has correlates to more severe pain. Basically there is an imbalance in the endocannabinoid system. It is believed that marijuana activates the cannabinoid receptors in your body. You can think of it as bringing it back into balance.

So when a woman with endometriosis is experiencing pain, CBD helps on a few levels. It works as an analgesic, reducing pain. It has antispasmodic properties and relaxes the muscles, helping with cramping. And its anti-inflammatory properties help keep the inflammation down- all this while increasing the number of cannabinoid receptors that are available.

Specifically during the menstrual cycle, women report a reduction in the intensity of menstrual cramping.

Women going through great pain report a decrease of pain to mild levels, and generally they say that the medical marijuana helped to dull their pain. In some cases women have disclosed that medical marijuana helps to get rid of their pain totally. Patients also say that they do not rely on prescription and over-the-counter medications as much. A vast majority of patients with endometriosis say that prescription medications don't help their pain, and the pain is more manageable with medical marijuana and it doesn't interfere with their ability to function anymore.

And isn't that what we all want- simply to live our lives without interruption. Everyone deserves to live a life of vitality and optimal health. That is what my goal is each and every day. I know as a woman getting your period is often an unwelcome inconvenience, but for someone dealing with endometriosis, it ratchets it up a couple notches beyond a simple inconvenience into a health crisis. So if you are burdened with endometriosis, you may wish to consider medical cannabis as a potential part of your treatment.

Flare-ups with Crohn's Disease

Crohn's Disease is an inflammatory bowel disease that affects the digestive tract. While symptoms vary, for most who suffer with this condition it can be painful and even life threatening. People with Crohn's can function quite well in remission, but when flare-ups happen, it can come on suddenly and can cause abdominal cramping, nausea, urgent bowel movements, bloody stools, and diarrhea.

Many things can trigger flare-ups and cause inflammation, such as diet, stress, antibiotics, and smoking cigarettes. So what happens when someone smokes pot?

Well, a study was done on 21 patients with Crohn's who weren't responding to traditional medications. 11 had marijuana with THC. The remaining 10 smoked it with the THC removed. After eight weeks of smoking it twice a day, 10 out of the 11 who smoked the medical cannabis with THC reported improvement in their symptoms, including less pain and improved appetite. Of those 11 patients, five even reported a remission of their symptoms. Keep in mind that none of these patients had reported success with traditional medications.

The group who smoked medical marijuana without THC did not do quite as well, but there was still success. Four out of 10 showed improvement in managing symptoms, with one person in the studying showing remission of their symptoms. Despite not having as much success as the first group, there was benefits. These were all people who had no success with Western medicine, and some found relief.

While there is no known cure for Crohn's, medical marijuana has shown promising results as an option for treatment.

A study performed in 2011 looked at disease activity, use of traditional western medication, need for surgery, and hospitalization before and after cannabis use in 30 patients. 21 showed significant differences in all fields but all reported positive effects on their activity concerning disease. Before using the medical marijuana, during an period of 9 years, 15 patients had 19 surgeries. After three years of use, only two required surgery. Out of 26 steroid users, only four needed to keep using the steroid.

The cannabis plant contains several different compounds. Cannabinoids have amazing anti-inflammatory properties. Two of the more active ones that have been of more interest have been THC and CBD, but much more research is needed to fully explore the possible benefits of medical marijuana. But for the people who suffer with Crohn's and are finding relief in medical marijuana, the results speak for themselves.

What's the Buzz on Medical Marijuana for Epilepsy?

Despite the fact that cannabis has been used for centuries to treat seizures, few actual studies have been done. However, the studies that have been done and the anecdotal evidence widely supports medical marijuana as an effective treatment for children and people who have medicine resistant epilepsy, like Alexis Bortell.

One study started with 213 young people all with severe epilepsy. In this study, 137 children and young adults completed the 12 week treatment with medical marijuana. Overall over half had a reduction in their seizures.

There was also a study with 162 participants where 99% CBD was added onto existing medications used to study the effects on people with difficult seizures. An average of 36.5% of people had decreased seizures, which is similar to effectiveness of anti-epileptic medications. 3 of those people over the course of 12 weeks were completely seizure free.

Clearing the Smoke on Parkinson's: Pros and Cons of Cannabis

A survey at the Parkinson's Foundation discovered that 95% of neurologists have had patients ask for medical marijuana to ease their symptoms. 80% of their patients with Parkinson's disease have taken cannabis in some form or another, but despite that 11% of doctors have given it to them. So why the disparity?

Well, let's start with a little bit about Parkinson's first. Parkinson's disease (PD) is a degenerative disorder affecting the central nervous system, where the nerve cells responsible for making dopamine begin to break down. Dopamine sends the message to the brain that you want to move. As your condition deteriorates, the function of movement becomes more challenging.

Symptoms include tremors, rigidity, slow movements, and difficulty with balance and walking. Usually it begins to present by age 60. Since it is a progressive disease, symptomatology can worsen over time. You may eventually have difficulty swallowing, and speaking. Ultimately, it may even lead to dementia.

As you may have already predicted, because cannabis has neuroprotective qualities, it suggests that it may be helpful in the treatment of MS, Alzheimer's, Parkinson's Disease, and possibly other neurodegenerative and neuroinflammatory diseases. Δ9-THCA seems to show neuroprotective activity. This implies that it would help with motor deficits.

It is suggested that medical marijuana could potentially help a patient with PD for anxiety, pain management, tremors, stiffness, appetite, dyskinesia, sleep dysfunction, weight loss and nausea. However, it is also believed to potentially worsen the effects of balance, fatigue, dizziness, hallucinations, forgetfulness, motivation, and sleepiness.

More research is needed to better understand the best delivery method and long term effects on patients with PD. So far nine states have determined that it is safe and beneficial to that population. Depending on your symptoms and situation, it may be an option for you.

As with any drug, you may experience unwanted side effects. With Parkinson's, you need to weigh the benefits vs the risks in your personal situation. I can't stress enough the importance of working in coordination with your doctor to get the right balance of medication. Making changes to your medical routine should always be done under the guidance and supervision of a doctor's care.

Combating PTSD with Medical Marijuana

When someone suffers a life-altering trauma, it can possibly trigger an anxiety disorder known as PTSD, or Post Traumatic Stress Disorder. Whatever the cause, PTSD can lead to isolation, addiction, and even suicide. Roughly 20% of veterans from Iraq returned from duty with PTSD. In soldiers, suicides outnumber combat deaths in a chilling statistic of 25 to 1.

If you have PTSD, treatments are available. Your PTSD should not go untreated. Studies have shown that many PTSD sufferers had improvement in quality of life while using medical marijuana. One reason that this may be is the cannabinoids ability for memory extinction, which is removing associations from stimuli, what triggers PTSD to flare up and react. By reducing the association of the stimuli to the past event, it just may help in moving you forward towards living more fully.

Researchers found that people with PTSD had lower levels of an endogenous cannabinoid compound found naturally in the body. Medical marijuana works therapeutically by adding a supplement to the endocannabinoids with those found in cannabis. It's the same as taking Vitamin D if you have a deficiency.

But that's not the only benefit. Many times people with PTSD also have other diagnoses. Medications and illegal drugs to numb the emotional trauma can lead to addiction.

But while many may benefit, as with any drug, this should be done under a doctor's care who is well versed in medical marijuana who can tell you if it is right for you and your situation and is familiar with dosing and possible side effects.

Autism: One More Piece Of The Puzzle

A woman carries a child in her womb for nine months, bonding- loving that child unconditionally before she can even look upon its face. So it is often a disturbing reality that when you have a loved one with autism, you may be faced with mixed emotions. Sudden violent outbursts can leave you in fear. Self-injurious behaviors can leave you feeling helpless as a parent. And aggressive behaviors can necessitate protecting yourself, other family members, and even strangers from your own child. But what never leaves is the love you carry in your heart for them.

Israeli mom Abigail Dar understood first hand what that complicated relationship felt like. With every outburst, she worried, "Who will be able to handle this man I love whilst I'm not able?"

Since the age of 12, her son Yuval was prescribed antipsychotic medications to quell his restlessness and self-stimulation. By the age of 16, he developed epilepsy. 30% of people with autism have seizures, but the antipsychotics prescribed made it more likely to occur.

The onset of his seizures also brought more self-injurious behaviors. He even bore a scar on his wrist from repetitive biting.

Antipsychotics seemed to be making the situation even worse, so over the course of 2-½ months, they weaned him off of it. There was actually improvement in behaviors, although he continued to bite and self stimulate.

Abigail read about cannabis, and approached Yuval's neurologist. Eventually, he was able to receive medical marijuana. Even after only one dose, the impact it had on him was evident. He stopped biting his wrist. He was more at peace with himself, which also allowed Abigail to be more at peace. He was more communicative and more cooperative. He watched TV. He listened. After having outbursts once or twice a week, he didn't have a single outburst for 18 months! His last outburst occurred while he was changing some strains. And the scar on his wrist... vanished.

For people who have witnessed that inner turmoil bubbling out onto everyone around them, for anyone who has lived in relatively constant fear of an unexpected violent outburst, finally being able to enjoy spending time with your loved one is monumental.

But Abigail knew that anecdotal evidence, while powerful stories, would need clinical support if this treatment was to be made available to others. As a mother, she couldn't run clinical studies, but what she could do is organize other people and gather data on the impact that medical marijuana had on children and adults with autism and their aggressive behaviors.

Abigail and some other moms formed a collaboration with Prof. Dedi Meiri. They began a project at the Laboratory of Cancer Biology and Cannabinoid Research in the Israeli Technion, tracking and gathering data on over 70 kids and adults being treated with medical marijuana.

A questionnaire was created targeting behaviors before and after cannabis, while also gathering information about the specific strains and components in the plant that were being used to achieve those results.

Their goal is to set up a global information center for safe and effective treatment of medical cannabis for autism and use this information to support legislation around the world to benefit children and adults just like Yuval.

Introducing medical marijuana to children and adults with autism has the potential for such a far reaching impact, for both the person with autism as well as their families, educators, and support staff. But more information is needed to persuade change in stigma and acceptance on a global level.

To support the works of Abigail or find out more about fundraising efforts, visit

<https://www.generosity.com/medical-fundraising/autism-and-medical-cannabis-global-data-gathering>

For many years people have used cannabis to quell the nausea and vomiting associated with chemotherapy. And it is a well known fact that marijuana helps ease pain. But can it cure cancer?

While people with cancer may use marijuana to treat symptoms, it is still questionable as to its ability to cure cancer. When studied in a petri dish, cannabinoids appeared to either kill the cancer cells or slow their growth. And in animal studies, it was able to slow the growth or reduce the spread, so that looks hopeful. Right?

There is a problem. The problem is there isn't any conclusive evidence to say it does the same in a human body. To add to the confusion, it has been thought that marijuana use may increase your risk to get testicular cancer but there is no evidence that supports the idea that marijuana escalates your risk of lung cancer. This is in spite of the known carcinogens found in marijuana. Does marijuana have any anti-tumoral qualities that prevent the onset of lung cancer? The limited studies that show promise encourage more research to be done, but the real answer is yet to be determined.

Risks of Cardiovascular Disease and Other Metabolic Disorders

Obesity: Do the munchies make you gain weight?

Marijuana use is notoriously associated with the "munchies", and would seem to also be associated with risk of weight gain. However, several studies support that people who regularly use marijuana actually have lower BMIs than people who are regular abstainers. There have been a total of six studies to support this fact. A cross-sectional study of 786 Inuit adults found that people who used marijuana in the past year had a lower BMI than non-users. An additional study examined the charts of 297 women referred for weight management and found that marijuana use was again associated with a lower BMI. It may be that people who smoke marijuana recreationally aren't drinking alcohol and that saves calories, or the munchies may be overstated.

As more states across America legalize medical marijuana use, the number of Americans using and benefiting from medical marijuana continues to rise. The increasing use of marijuana for medical purposes also highlights the need for a clear understanding of potential risks associated with treatment. Within areas of importance, several diseases need to be carefully considered. Included among them are obesity, cardiovascular disease (heart attack and stroke), cannabinoid hyperemesis syndrome (nausea and GI side effects), cannabinoid induced psychosis and memory loss (mental health). I will cover concerns surrounding psychiatric disease and medical marijuana use, memory loss associated with drug use, and vomiting syndromes that can be worsened with the use of medical marijuana.

Marijuana may affect cardiovascular health in several different ways. Like other similar medications, it can have effects on the blood vessels. The active hallucinogenic ingredient, the cannabinoid THC, is responsible for the psychoactive effects of marijuana by its interaction with the cannabinoid receptors. These cannabinoid receptors are present in the brain, and can lead to a feeling of well-being for the marijuana user, but the receptors are also present throughout the body, especially in the blood vessels in the heart, and in smooth muscle cells. Both human and animal studies have shown that the cannabinoid THC can modulate receptors not only in the brain but also of the heart and smooth muscles and also impact the regulation of sugars and fats in the metabolism, which could result in possible

long-term effects on the health of the heart and blood vessels. In addition, at the cellular level, THC could result in some inflammatory chemical release from cells, that may result in further modifications of fat metabolism, which may potentiate the progression of vascular disease. Smoking marijuana can also lead to an up to fivefold increase of blood carbon monoxide levels and a threefold increase in the quantity of tar inhaled compared with tobacco smoke.

However, all of these concerns need to be considered in the setting of potential benefit. Certainly, a person with uncontrolled anxiety or pain has plenty of inflammatory mediators releasing routinely, and is also having a negative impact on the metabolism of sugars and fats through all of this ongoing chronic unmanaged inflammation. Chronic anxiety, stress, and pain can also stress the heart and blood vessels through a number of different mechanisms. Someone using marijuana to control these symptoms may be suffering with associated heart disease related to their condition, not due to marijuana use.

For more information on this: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4204468/>

Myocardial Infarction

Very limited data is available regarding risk of myocardial infarction and marijuana use. One study of 3,882 patients who had myocardial infarction was completed. These patients were interviewed after they suffered their heart attack, within about four days of their heart attack typically. They were asked if they had used marijuana within one hour of their heart attack or at any time in the previous year. About 3.4% of people admitted to the use of marijuana either immediately before their attack or within the previous year. Of these 120 patients, additional risk evaluation was performed, and the researchers felt that the marijuana may have led to a small increase in risk for heart attack. However, they had difficulty controlling for other lifestyle behaviors that contribute to heart attack such as smoking, lack of exercise, and a poor diet. So the study has little value for determining real risk of myocardial infarction associated with smoking marijuana, because of all of the limitations of the data collection. It is notable that a very small number of the patients who presented with heart attack admitted to recent use of marijuana, which may be related to the age of the population or provide additional encouragement that marijuana use doesn't appear to lead to acutely increased risk of heart attack.

Stroke

Cardiovascular disease is frequently divided into heart attack and stroke so that risk of these two diseases can be assessed properly. There have been two studies that have examined the effect of smoking marijuana on stroke and on transient ischemic attack, which is simply stroke symptoms that resolve completely in under 72 hours. One study reported that marijuana was not associated with stroke, but this study is limited because the population was young and healthy. Stroke would typically impact older people with other chronic conditions such as high blood pressure, diabetes or obesity.

Another study enrolled 49,321 Swedish men that had been in the military. They were followed throughout their lifetime to assess for risk of stroke and other conditions. No association was made between the use of marijuana and stroke. However, this study is limited by irregular follow-up over the years, and by the possibility that some study participants may not have been truthful on a questionnaire.

Another study attempted to assess patients who had been admitted to the hospital for stroke or transient ischemic attack. They were unable to find an association between stroke and marijuana. The study, however, was limited because it did not confirm marijuana use with urine screening tests, not all participants were properly screened, and the urine screening tests may have misclassified exposure, because the result can remain positive for up to 10 weeks.

Finally, to get a better understanding of the risk to overall health, cardiovascular disease is sometimes lumped into all-cause mortality, where stroke and heart attack outcomes are combined. In studies that have lumped these outcomes to try to determine an effect with marijuana, marijuana use was actually associated with a beneficial metabolic effect. These studies are also plagued by ineffective questioning surrounding the frequency of use of medical marijuana, as well as the duration of use. Also, measures of other factors such as diet or exercise were limited. No relationship has been found between marijuana and the development of diabetes, or between marijuana use and changes in blood glucose, cholesterol levels or triglyceride levels, even among heavy users during 15 years of follow-up.

All of these studies are limited by marijuana use being measured by individual report. The current available research neither reveals increases or decreases in risk for cardiovascular disease or other metabolic disorders. Although many articles on the internet or in other news spheres have suggested that marijuana has benefits to the cardiovascular system, such as reducing blood pressure or stabilizing blood sugars or improving cholesterol profiles, comprehensive review of the available research does not support these claims. Furthermore, the popular belief that marijuana use causes “the munchies” may be true, but there is no evidence that there is associated weight gain or obesity with regular marijuana use.

These research studies are also limited by the relatively young age of most of the people in the study. It makes sense to consider other factors that may be contributing to overall cardiovascular health and review marijuana use with your doctor before starting therapy. If there is underlying increased risk for cardiovascular disease, such as hypertension, diabetes or obesity, some additional discussion with your doctor and at least making your doctor aware of medical marijuana use would be appropriate and wise. If you start to feel better we will know to give credit where credit is due.

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Chapter 5 - What You Need to Know - Fact & Fiction

MYTH: There isn’t enough research to support medical marijuana.

FACT: Yes and No.

Despite the ban on research in the US, more than 20,000 scientific studies referencing marijuana and/or its constituents has been published. In fact, more scientific papers have been done on marijuana than ibuprofen, Ritalin, hydrocodone, Adderall, and Oxycodone combined. And while it has been used for thousands of years and has been studied heavily,

more research is wanted because it appears to have a wider scope of benefits than have already been proven. As more research happens, we gain more information on other potential uses. So while studies have already provided ample evidence of risks, safety, efficacy and medical benefits for use of medical marijuana with specific diseases, more research is needed. WE need to know how medical cannabis could possibly benefit a wide range of conditions.

MYTH: Medical cannabis laws and/or dispensaries are associated with increased crime.

FACT: Untrue.

A 2012 study reported, “There were no observed cross-sectional associations between the density of medical marijuana dispensaries and either violent or property crime rates...” In 2014, another study reviewed whether there was an elevated risk of increased crime in states that legalized medical cannabis. During 1990 and 2006, 11 states legalized it in one form or another. After a review of all 50 states during those years, they looked for an association between when a law was enacted and specific criminal activities: homicide, rape, robbery, assault, burglary, larceny, and auto theft. It was determined the legalization of medical marijuana was not a conclusive cause of higher crime rates.

MYTH: No reputable organizations or physicians support the use of medical marijuana.

FACT: Quite the opposite.

A study done by WebMD said that 70% of doctors acknowledge that medical marijuana can help patients. The percentage is higher amongst oncologists. One survey asked 1,446 physicians if they would agree with the use of medical marijuana for a woman in the advanced stages of breast cancer. More than 50% agreed and said yes they would give the patient medical marijuana.

In addition, many reputable organizations, such as the American Medical Association, the American Academy of Pediatrics, and the American Osteopathic Association, have wanted to see marijuana reclassified as a Schedule 2 drug and for good reason. They acknowledge the schedule it is classified under stems from political reasons and not medical reasoning. Marijuana has long been accepted to have obvious medical benefits and a significantly lower abuse concern than many current treatments physicians are currently able to offer. This means that it has been classified inaccurately. They want marijuana treated on the same playing field as all other drugs and not treated differently. That would open up testing and studies with the FDA and provide for better information for doctors and patients.

Many organizations, like the Epilepsy Foundation, the American Cancer Society, and the National Multiple Sclerosis Society, have long since recognized the medical benefits that it brings to their population and would like to reclassify marijuana and allow medical decisions to be between a physician and their patient and not a physician the patient and the government.

MYTH: CBD has medical benefits, but THC just makes you high.

FACT: Both offer their own set of medical benefits.

Cannabidiol (CBD) and Tetrahydrocannabinol (THC) are two types out of many, many cannabinoids found in the cannabis plant. THC is the compound that produces that psychedelic effect so often associated with “weed,” but both CBD and THC carry unique, medical properties for different medical applications, as well as shared.

While CBD counteracts psychoactive side effects you may experience with THC, it helps with psychotic episodes for people with Schizophrenia. You will see CBD used for a multitude of mental illnesses, and one of these is an antipsychotic. It also gives great relief to someone experiencing pain. As CBD protects the nerves, it’s considered to be a positive treatment for diabetics with neuropathy.

While CBD binds indirectly to the CB1 and CB2 receptors in your body, THC binds directly. It’s effects are felt more powerfully. THC helps with increasing your appetite (those famous munchies), relaxing the muscles, improving sleep, and combating nausea and vomiting.

MYTH: Medical Marijuana is delivered by smoking pot.

FACT: Sometimes

Each state has specific regulations on what it will and will not allow. Medical marijuana can be smoked, vaped, in the form of edibles, sublingual sprays or tinctures, transdermal patches, topicals such as lotions, ointments or oils, capsules, flowers, ... The delivery methods are numerous, but different ways are good for different purposes. Not only should you consult your doctor, but dispensaries are a great source of information.

FUN FACT: Marijuana was the fastest growing legal industry in the U.S. in 2015.

FUN FACT: By June 2015, in Colorado, there were more medical marijuana dispensaries in Colorado than Starbucks or McDonalds.

FUN FACT: The first recorded use of medical marijuana was back in 2737 B.C. by Chinese emperor Shen Nung.

Smoking Marijuana vs. Using a Cannabis Vaporizer

When e-cigarettes came out, it offered hope for people who liked to smoke, who either wanted to quit or wanted to reduce some of their health risks. And vaping has since taken off. Is it considered the “healthier” option when it comes to medical marijuana? When trying to decide which form of medical marijuana is right for you, let’s look at the pro’s and con’s of smoking v vaping.

When you smoke a bong, a pipe, or a joint, you will light it, inhale the smoke and take a hit. Start small. Wait a few minutes to see if you have the desired effect. If not, you take another hit.

Pros of Smoking

- You get relatively instant relief.

- Dosage is easily controlled.
- It is inexpensive.
- As compared to oils, it is minimally processed.
- There are a variety of options to choose from.

Cons of Smoking

- Smoke can cause respiratory problems.
- In many cases, not a good option for anyone with pulmonary damage (lung cancer, emphysema) or asthma
- The smell lingers, and you and your surroundings will smell like pot.

So how does vaping compare? Vaping also heats up the cannabinoids allowing them to release the medical compounds, but it doesn't combust. So you are getting the vapors without the smoke.

There are different types of ways to vape. You may use a vaping pot. Preheat the vaporizer to the recommended temperature. Place the dried flower or extract into the vaporizer. Press a button and inhale. Or for something discreet when you are on the go, you may want a vape pen. There are many options, but the end result is the same.

Pros of Vaping

- You get relatively instant relief.
- Vaping is easier on your lungs than smoking. There is less tar.
- It preserves more active ingredients
- You can customize with added flavors.

Cons

- The initial upfront cost is higher. Vaping units can be very expensive.
- There is higher maintenance. Battery powered units must be recharged, and vaporizers need cleaned.
- You need time to warm up the vaporizer.
- There is a steeper learning curve, both in buying a product and using it.

Generally, vaping is considered the healthier option of the two. But smoking or vaping are not always the best choice for your medical needs. There are also other forms of medical marijuana that may suit your particular condition more, such as edibles, sublingual sprays, topicals, transdermal patches, suppositories, or "dabbing." Talk to your referring physician and local dispensary for guidance and more information about what's right for you.

The Effects of Marijuana on Fertility and Pregnancy

Before we worry about the effect marijuana has on pregnancy, let's look at if it impacts getting pregnant. Marijuana use has been shown to lower sperm count, interrupt the menstrual cycle, and can affect the hormones needed in the reproductive process. So if you have dreams of babies in your future, stash away the hash. It may be limiting your chances. Now what to expect when you're expecting and using marijuana. We know that marijuana works great for nausea, so what about morning sickness? Well, regardless of whether or not it works for you, it is not recommended for that little sprout growing inside of you.

Several serious complications can occur as a result of medical marijuana use, so the health benefits for mom need to be heavily weighed against the possible health risks to the child. There seems to be a link with low birth weight, premature birth, anemia, and even stillbirths. Your child can exhibit problems with sleeping, behavior, memory, learning, problem-solving, depression and attention when exposed to marijuana in the womb. It can even have some withdrawal symptoms upon the first few days after birth, requiring it to be monitored in the NICU.

It appears to change the development of the child's brain. One of the most serious risks is anencephaly. Anencephaly is a neural tube problem where most of the brain and skull do not develop the way they should. This occurs within the first month of pregnancy. Generally the child dies.

Because the baby is developing so fast during pregnancy, minimizing the risk to long term problems with the brain is very important. A longitudinal behavioral study in Wistar rats began to observe the effects of perinatal exposure to THC on the emotional reactivity of the offspring. The results indicate that concentrations of THC administered to the pregnant or nursing mothers had long-lasting effects on the child.

Again this study was on rats- not people. So we are limited in our knowledge of how it affects people. More research is needed.

But because of the risk of THC passing through the placenta during pregnancy as well as THC entering the breast milk, it is generally not recommended. However, if you require medical marijuana and there is a risk that without it you might not be able to carry the child to term, you should talk to your doctor to see what options are available to you and be monitored closely.

Is Marijuana Addictive?

Before we can answer the question "Is Marijuana Addictive?", let's address what addiction is. The word addiction carries a different meaning for different people. Someone can have a physical addiction that compels them to have a substance despite it causing them harm. For example, opiates produce a high where the brain thinks it does not need to produce endorphins. When you no longer are high, endorphin production doesn't kick in, and you physically need the opiate. BUT others can have a psychological addiction where they feel dependent upon something in order to cope. While opiates also are psychologically addictive, think of this category more like a dysfunctional coping mechanism that takes over. Emotional eaters are all too familiar with food being used as a coping mechanism. When a habit can easily be stopped, it is not an addiction. As for psychological addictions, anything that you depend on that when it is absent interferes in your life, basically indicates a possible psychological addiction.

So back to the original question. Is marijuana addictive? Yes, for about 9% of people who use it, they formed a dependence on the drug. A study estimated that the transition to dependence was much higher in those who use other drugs such as tobacco or cocaine and in alcohol users. Addiction was also higher in those who began use as a teen or adolescent.

While there is a potential risk of forming an addiction, it is a lower risk than many other drugs.

Also, while less intense than many other drugs, after daily, heavy use, 50% of daily users can suffer from cannabis withdrawal syndrome. And while it is less intense, it can still be a problem.

Withdrawal from marijuana is different for everyone. For most heavy marijuana users, withdrawal symptoms begin on the first day after quitting and peak around 2-3 days. Withdrawal generally lasts a couple of weeks and dissipates over time.

Symptoms can include heightened anxiety, depression, changes in mood, irritability, loss of appetite, nausea, cravings for marijuana, and insomnia. If you have co-occurring addictions to other chemicals, such as benzodiazepines or alcohol, it can exacerbate withdrawal symptoms. For very severe cases, you may experience sweating, hallucinations, fever, and chills.

As with other medications, if you have been on marijuana for a while, your doctor may wish to decrease the amount you take to stave off withdrawal symptoms, rather than abruptly stopping marijuana, “quitting cold turkey” so to speak.

Remember that your health should be your number 1 concern. When you are healthy, it allows you to live a life filled with vitality. My goal is to get you to a point where whatever dreams you have, you have a chance to fulfill them. You can’t do that when you don’t take care of yourself.

If you are having problems with your medication, talk to your doctor for recommendations. It may be a simple change, or you may need to go in a different direction. But your doctor is there to support you.

Effects of Smoking Marijuana on the Lungs

The negative effects of smoking marijuana have been much more heavily researched, and the obvious area of interest is on the lungs. With the awareness of cigarettes effect on your lungs, the question has always been “which is worse?”. In some ways it's like comparing apples and oranges though.

Cigarettes are legal, so participants in studies are more likely to be honest about usage. Also, because they are legal, there is some regulation and consistency to be expected; whereas, illegal marijuana can be tainted and varies with the substances in it. Medical marijuana has controls set in place, but it is relatively new. So studies tend toward recreational marijuana, but it still gives us a pretty good glimpse at what to expect.

While some effects are the same as cigarettes, there are some differences. According to the American Lung Association, smoking marijuana damages the human lung. Here's what the research suggests.

Smoking marijuana...

- can contribute to chronic bronchitis
- injures the cell linings of the large airways,
- leads to symptoms such as chronic cough, phlegm production, and wheezing
- kills cells that help remove dust and germs and causes more mucus to be formed
- suppresses the immune system
- may increase the risk of opportunistic infections

But what effect does marijuana have on the lungs when it is not smoked? Some are turning to CBD oil for COPD, the third leading cause of death in disease related deaths. While inhaling marijuana may be negative for your lungs, taking it in a different form could have the opposite effects.

Does Marijuana Cause Lung Cancer?

Research in this area is very exciting, but so much more research is needed to answer the question “Does marijuana cause lung cancer?”. With everything we know about the chemicals that are in tobacco that are known carcinogens, many of the same chemicals are in marijuana and can even be in higher amounts. Plus, when you inhale marijuana, you tend to hold it longer than you would if you were smoking a cigarette. There is also a shorter butt length, no filter, and it has a higher combustion temperature. “This results in approximately 5 times the carbon monoxide concentration, 3 times the tar, and the retention of one-third more tar in the respiratory tract.” Common sense would lead you to suspect the answer is “yes, marijuana causes lung cancer.” Yet, evidence is lacking that confirms an association between smoking marijuana and lung cancer.

How is that possible?

There are other contributing factors that make it difficult to assess. Because federal law has made it illegal to smoke weed/grass/pot in the US, fear of admitting usage could limit how many people actually report the truth. Also, many people who smoke marijuana also smoke cigarettes, which are known to cause cancer.

So what caused the lung cancer?

1. Cigarettes
2. Marijuana
3. Each of them carry a risk, or
4. An interaction that occurs between the two

A review of 19 studies adjusted for tobacco use and concluded that they failed to show any significant association between smoking marijuana and lung cancer. At this time, there just isn't enough evidence to link smoking marijuana to a higher risk of lung cancer.

So if marijuana has a lot of the same bad stuff that tobacco has that causes cancer, why would marijuana act any differently? Well, some studies are pointing to anti-tumoral

properties found in THC. It appears that THC induces autophagy. Autophagy is a process our body uses to strengthen a cell or kill cells that are harmful. Recent research indicating that autophagy mediates THC-induced cancer cell death is a huge discovery that cancer researchers are wanting more information on.

Sadly, so much time, money, energy, and focus has been put into biased research on the negative effects of marijuana that we have lost years of sound scientific research that allows us to fully understand the mechanisms and components of how, what, and why cannabis does. This highlights the importance and precisely why medical professionals and scientists prefer an apolitical approach to medical research. But this is one area that oncologists and scientists are hoping to make a breakthrough.

Does Marijuana Cause Permanent Brain Damage?

The research doesn't all agree, so let's start with all the facts.

There are different stages of brain development. Until 25 our brains are not fully developed. The last section of the brain to mature is the prefrontal cortex, which is vastly altered in the teen years of life.

The reason the prefrontal cortex is so important is it's responsible for being responsible. The prefrontal cortex is in charge of executive functions like controlling impulses and making decisions. This is easy to see in teenagers, as they make impulsive decisions and exhibit risky behaviors. Adding in a substance that would lower your inhibitions would make it more difficult to control unwise behaviors.

So how does cannabis affect a still growing brain?

Studies done on animals seem to show that THC exposure during adolescence has a correlation to having problems with memory and learning later in life. Structural and functional changes in the hippocampus as a result of adolescent THC exposure seemed to have a negative effect on the cognitivity of adult rats. The study also showed that these adult rats had an increased likelihood of self administering other drugs

These, however, are rats, not humans. MRI imaging in human adults hasn't come back with any conclusive answers. Some brains show changes, but others don't show any. Some of the changes were a decreased hippocampus and grey matter, cognitive impairment, and a lower IQ. Contrasting to that a study showed that one of the components of marijuana, CBC, boosted the growth of developing cells in the brain. Yet another study showed that CBD made the cells in the hippocampus stronger. As discussed earlier in the book there is scientific evidence to suggest that marijuana may help Alzheimer's, cleansing the cells of plaque buildup and helping the brain to remain healthy.

This is a difficult area to research. There is often comorbidity in people who use marijuana. Also, since you are looking at long term effects, a variety of things could be at play. Environmental factors, genetics, lifestyle impacts... This is an important question that still needs answered.

Reefer Madness AKA Cannabis-Induced Psychosis

Marijuana is the most widely used illicit drug in the United States, and if current trends continue, that relatively high use of marijuana will continue to eclipse the use of any other street drug. In addition, additional information surrounding the emerging evidence of risks to health is being further evaluated and understood as use increases.

There are numerous lines of evidence to suggest a correlation between the use of marijuana and various psychiatric conditions. In the past, these conditions have been referred to as "reefer madness," which we now refer to scientifically as cannabis-induced psychosis (CIP).

While it can be difficult to differentiate cannabis-induced psychosis from other psychotic disorders or psychotic breaks related to other chronic psychiatric conditions like severe depression or schizophrenia, CIP has distinguishing characteristics that may help aid in the diagnosis.

Specifically in young people, there is thought to be a direct relationship with the frequency of use of cannabis and the risk of psychotic breakdown. With increased use of marijuana, as well as recent legalization of recreational marijuana, there has been a dramatic increase in marijuana-related emergency room visits.

In relation to psychotic episodes, marijuana is considered an environmental risk factor that is associated with a greater risk of psychosis in a dose dependent fashion. This means that the more marijuana that is used, the higher the risk of the development of psychosis. However, it's unclear if further research will support this position, since much of the older research may have been biased.

Obviously, a number of factors contribute to the development of psychosis, but it appears that the primary psychoactive ingredient is considered to be the cannabinoid THC, and specifically the Delta 9-THC. The Delta 9-THC has a long half-life, up to 30 days to be eliminated from the urine, as well as high lipophilicity, which may contribute to its likelihood to induce psychosis. The lipophilicity (fat-loving) allows it to bind aggressively to the tissues in the central nervous system, which have a very high fat content.

During acute consumption, the marijuana will increase the synthesis and release dopamine across neurosomatic transmitters, and also limit the reuptake of dopamine, similar to other stimulant medications. Typically, patients with cannabis-induced psychosis are found to have elevated peripheral dopamine metabolite products.

Long term users of marijuana appeared to have decreased overall dopamine synthesis, probably because the dopamine that is synthesized is having a more lasting effect due to the administration of the marijuana. This isn't the same dopamine alteration seen in schizophrenia, and that suggests that treatment of any psychosis that occurs with administration of marijuana may require different treatment than a standard schizophrenia.

As with many diseases, there may be an association with some genetic compositions that increased the risk for the development of the condition. There is some controversy as to whether cannabis-induced psychosis is a distinctly individualized clinical identity or if it just a manifestation of schizophrenia. It's unclear whether smoking marijuana results in the

development of schizophrenia that was already within the patient or if the patient simply experienced the psychotic break directly related to marijuana administration. There does seem to be an association between the two disorders, but it's still unclear if marijuana is simply a catalyst for an underlying condition or a separate stimulator.

When you're considering the diagnosis of cannabis-induced psychosis, careful history taking is critical. Sometimes, smoking marijuana can lead to paranoia, grandiosity or changes in perception as well as some anxiety and also trouble with working memory, verbal recall and attention. The duration and persistence of these symptoms related to acute administration, withdrawal of medication, or chronic use of medication will help distinguish marijuana use with schizophrenia. Creating an excellent timeline is critical. Often, a person thought to be suffering from cannabis related psychosis is actually self treating underlying schizophrenia that is still early enough to not be noticeable to those around him.

Schizophrenia should be considered if a person used marijuana heavily and has undergone withdrawal for at least four weeks with persistent symptoms, or if the symptoms occurred prior to the onset of heavy use with marijuana. It's also important to consider the age at which the psychotic symptoms emerged, although that is not as directly correlative.

People suffering with cannabis-induced psychosis have also been shown to have more mood symptoms than a primary schizophrenia. Often people experience more obsession, interpersonal sensitivity, depression and anxiety. Up to 20% of patients with cannabis-induced psychosis demonstrate social phobias and anxiety compared with only 3% of patients with primary schizophrenia. Hypomania and visual hallucinations and agitations are also shown to be more common and more distinct in cannabis-induced psychosis as opposed to schizophrenia.

Also, it's important to consider family history. If other members of the family in first or second degree relatives are dealing with schizophrenia or other psychosis, the likelihood of the patient's psychosis being related to their marijuana use is less. As with all substance-induced psychotic states, abstinence from cannabis may be the best recommendation to prevent recurrence.

Achieving symptomatic control of cannabis-induced psychosis has proven to be difficult with current medications. Some antipsychotic medications such as haloperidol, manufactured under the name Haldol, as well as olanzapine, may be effective, but their adverse events may be more pronounced in cannabis-induced psychosis.

It also seems that antipsychotics worsen the condition in some patients. Trials of lithium have also been somewhat helpful, but it appears that hallucinations can sometimes be less controlled with this condition than with other psychosis.

As more countries and states approve legalization of recreational or medical marijuana, and thus marijuana becomes more accessible, cannabis-induced psychosis and other psychiatric disorders related to the use of marijuana are expected to increase.

Efforts should be made to educate patients about risks of cannabis use and consider further interventions to make sure that people who experience symptoms undergo rapid and non-judgmental treatment with appropriate recommendations. As providers and practitioners within the emerging field of medical marijuana, it is important that a clear and complete

discussion about risks and benefits of the use of marijuana is undertaken in a logical and professional manner.

-Cannabinoid Hyperemesis Syndrome:

A Symptom from Heavy Use Signals It's Time to Stop

Some people who smoke marijuana on a daily basis are at risk of developing a particular type of nausea and vomiting that is relieved by hot baths or showers. Cannabinoid hyperemesis syndrome (CHS) is a form of cyclic vomiting syndrome, a disorder that causes sudden repeated attacks of severe nausea and vomiting that can last for several hours a day. Cannabinoid hyperemesis syndrome results from chronic, heavy use of marijuana, resulting in recurrent episodes of severe nausea and vomiting with associated severe abdominal pain that is temporarily relieved by taking a hot bath or shower.

The symptom resolves when marijuana use is stopped.

Cannabinoid hyperemesis syndrome is thought to be caused by stimulation of the cannabinoid receptors in other parts of the body resulting in various physiological processes such as changing the appetite and possibly slowing down smooth muscle contractions in the gut, leading to changes in digestion.

Cannabinoid hyperemesis syndrome was, until recently, thought to be uncommon or even rare. But as marijuana use has increased, emergency room physicians and primary care physicians are reporting a steady flow of medical marijuana patients who are experiencing the symptoms of nausea and vomiting, especially in states where marijuana has been decriminalized or permitted for use for medical reasons and patients are more likely to inform their doctors of their marijuana use.

In Colorado, practitioners reported a doubling in the number of cases of cyclic vomiting syndrome seen in just a few short years. In a new study based at Bellevue, a large public hospital in New York City, 2,127 adult emergency room patients under 50 were studied. Of 155 patients who said they had smoked marijuana at least 20 days a month, about one-third said they had experienced uncontrolled nausea and vomiting symptoms that were specifically relieved by a long, hot shower.

If this information is extrapolated across the country, it's likely that 2.7 million of the 8.3 Americans known to smoke marijuana on a daily or near daily basis may suffer from at least intermittent bouts of cyclic cannabinoid hyperemesis syndrome.

While the number of people affected by cannabinoid hyperemesis syndrome is uncertain, it is almost certainly higher than what was previously thought. It appears that many people are affected, rather than only a small percentage of regular marijuana users. Several physicians also report not seeing a considerable amount of CHS when prescribing medical marijuana for conditions ranging from chronic pain to epilepsy to HIV/AIDS or cancer, saying that the cyclic vomiting syndrome appears to be associated with the psychoactive cannabinoid THC rather than the compound typically found in higher doses in medicinal products, the cannabinoid CBD. Alternately, doctors may be unfamiliar with this diagnosis, mistaking it for other diagnoses that lead to excessive nausea and vomiting, or even misdiagnosing as a

psychiatric or anxiety-related disorder. Some doctors may dismiss the diagnosis as a rare or kind of funny disease where people spend hours in the shower.

However, people suffer tremendously with hyperemesis syndrome, with some people arriving at the hospital severely dehydrated from the combination of hot showers and persistent nausea with hyperemesis. Some patients have experienced acute kidney injury related to dehydration. Because the syndrome often occurs only after many years of marijuana use, physicians often don't make the connections, and patients often have a hard time accepting the diagnosis.

Since medical marijuana is viewed as medicinal, and frequently given to people with cancer, nausea and HIV, it seems paradoxical and illogical for the same drug that helps nausea and stimulates the appetite to cause nausea and vomiting. It's not clear why these paradoxical effects can occur in different patients, but some doctors liken it to some patients having some trouble with allergies to a favorite food. Oftentimes, repeated multiple exposures can promote an allergy that otherwise may have not been noticeable.

The diagnosis of CHS is often made after considerable time duration and expensive workups, including even CT scans and exploratory surgery. Patients do not respond to drug treatment, even though some physicians have reported success with certain antipsychotic medications such as haloperidol and also with topical capsaicin cream. The good news is, CHS is easily cured with stopping marijuana use. If a patient stops having pain and vomiting when they quit smoking, they can also attempt to restart smoking. They are likely to have a recurrence, in which case, the diagnosis is almost certainly CHS.

Chapter 6 - Getting To Know The Experts

My Journey - Dr. Mary Clifton

If you have ever watched a loved one struggle with chronic pain or cancer, you can understand the feeling of helplessness. Just like a mother with a crying child, all you want is to make the pain go away, but all you can do is hold them and console them. It is frustrating to want to help, but can't. That's where my journey began.

I had a good friend that was struggling with crippling pain. She went on several pain killers, and I could see the look of agony in her eyes. It's that look of suffering. She tried so hard to be stoic, but the reality is that she was enduring a pain that we all hope we never have- Cancer.

Eventually, disappointed and feeling like she was "giving in," she turned to medical marijuana. The difference in her pain management was astounding. This was why doctor's go into this field- to help the sick, and yet this was not something that I was able to do as a licensed internal medicine physician.

Shortly before this happened, the state of New York passed a law permitting medical marijuana. But just because it was now legal to prescribe did not mean that every doctor could do that. You needed a special license to write a prescription for medical cannabis. After watching firsthand what my friend went through, without hesitation I decided to become a registered practitioner with the NY State Department of Health.

This allowed me to treat and ease symptoms for people residing in New York who qualified with specific conditions. This opened up a resource available to people that only a few years ago just wasn't an option. People diagnosed with specific severe, debilitating or life threatening conditions were now potentially eligible for Medical Marijuana.

I am now honored to be a part of the medical team for so many who suffer from conditions like Cancer, HIV infection, AIDS, Amyotrophic Lateral Sclerosis (ALS), Parkinson's Disease, Multiple Sclerosis (MS), Spinal Cord Injury with Spasticity, Epilepsy, Inflammatory Bowel Disease (IBD), Neuropathy, and Huntington Disease.

I hope to ease some of the suffering that people deal with. My desire is to share awareness, debunk myths, and provide a more enlightened approach to bring about changes on the federal level by allowing medical marijuana to be a viable part of someone's treatment plan.

My Personal Quest for Good Health - From Dr. Tom O'Bryan

I have committed my life to changing the conversation from modern methods of treating symptoms to the practice of functional medicine, where you dig deep to find the root cause and work to eliminate the source of your autoimmune disease. Preventing chronic inflammation, halting the progression of autoimmunity, and reversing wherever you are on the autoimmune spectrum has become my life's mission. Even though I'm now known the world over for my work on autoimmunity and gluten sensitivity, believe it or not, in my early twenties I was a baker in an organic restaurant in Ann Arbor, Michigan.

I'd eat freshly baked whole wheat bread, spread it with organic peanut butter, and drizzle honey over sliced bananas. I thought I was choosing healthy options. I was hungry all the time and would have major sugar crashes after eating. Little did I realize the damage I was inflicting upon my body.

I practiced aikido, a form of martial arts that works to remove resistance and redirect powerful energy, and allows your body to flow. I even moved to Japan after graduation to live in a martial arts school to hone my skills. Physically I never felt better. I was clear headed. My energy and endurance were up, but I missed the woman who was to become my future wife. So I returned to the US.

My wife suffered from chronic back pain. She was in an accident at the young age of 12. Sometimes the pain would flare up so severely that she would have to be hospitalized in traction for a week at a time. I felt helpless as I watched her suffer in agony. While I was trying to find a way to relieve her pain, I was also searching for a new career. That's when I met Dr. Harold Swanson, an 84 year old chiropractor.

When I first took her to him, I had to carry her in, but she walked out. I could see the similarities between chiropractic care and aikido. Removing resistance and allowing the energy or your body to move once again. I decided to become a chiropractor.

Little by little, with the return to the States, and the return to my regular eating habits, my health began to gradually slip.

I went to study at the National University of Health Sciences in Chicago. The first weekend there, I attended a seminar featuring Dr. Kirpal Singh. He shared a powerful anecdote that I still recall today.

A 42-year old woman had come to see him because she had been diagnosed with adult-onset diabetes. After his initial exam, he told her, "I believe that when you were a young

child, you had a virus, and it almost killed you. The virus settled into your pancreas, causing inflammation and upsetting your hormone balance to the point where you developed hypoglycemia. You've had hypoglycemia for the last 35 years. Now it just progressed into type 2 diabetes."

The woman, shocked, replied, " Doctor, you're right. I did have hypoglycemia for many, many years, but I never was sick as a child."

He calmly answered, "Yes, you were. If you mother is alive, call and ask her."

Right then and there in his office, she called and asked her mother.

Her mother said, "Honey, it's true. You were so little, and our doctor was out of town. We tried everything because you had a really high fever, including putting ice packs on your feet. We didn't realize it at the time, but you almost died."

I was stunned. How did he know?

The following weekend another great speaker came to lecture: this time former body builder Sheldon Deal, DC. He opened a briefcase and retrieved a magnet. He held it up to a TV that was on without the volume. The picture on the TV went upside down. He said, "That's what electromagnetic energy does to your nervous system." The barrage of electronic devices that people wear, carry, or use routinely like electronic watches, cell phones, Bluetooth devices, could be contributing to inflammation in the brain. His presentation made me realize that our environmental exposures can have a silent but profound impact on our health.

At this point, I began to get a broader idea of just what chiropractic care involved. It wasn't just adjusting bones and muscles. It included diet, nutrition, and your environment.

And so my studies continued. Enamored by it all, I began to make connections. So when my wife and I had difficulty conceiving, I called seven of the most famous holistic doctors I'd ever heard of. Each one offered a piece of information that helped me to solve the puzzle. This included going gluten-free. Imagine, someone who baked 48 loaves of bread daily, someone who included whole wheat as part of a healthy diet... I thought that was a healthy part of my diet.

Well, I applied all of the valuable advice and put together a program. In 6 weeks, my wife was pregnant! One of the critical components was gluten and dairy. I then began to focus my practice on treating couples with hormone imbalances and infertility.

I established a comprehensive holistic approach to health care. As my practice grew, I realized that patient after patient had food sensitivities.

Meanwhile, I was blissfully unaware that my own health was suffering. At 40, I was a long-distance runner. My body seemed to be very fit, but I was diagnosed with a cataract- something very unusual for someone my age in good health. I discovered that high lead levels can be a trigger. I didn't expect that to be the reason. I didn't have any reason to suspect lead was the root cause, but better to test than guess.

Apparently, I had the highest levels of lead poisoning of any of the hundreds of people I had ever tested.

I looked back at my own timeline. During the first eight years of my life, we lived in Detroit across the river from Ford's largest assembly plant. Nowadays, we have stricter pollution controls, but back then pollution spewed into the air and water.

I got the lead out, but the knowledge shook me. I dug deeper.

But with all the knowledge I had been gaining over the years, I still occasionally found my low blood sugar a problem when I vigorously exercised. So I thought a bunch of donuts before running would provide the energy or fuel I needed, and those donuts would just burn over the course of a couple hours. Surely that wouldn't be a problem, right?

Then I ran another test. I had three different elevated levels of antibodies that would affect my brain function over time. I was clearly on the autoimmune spectrum!

If you asked anyone, I looked healthy. I generally ate very well and did triathlons. I felt pretty good, too. But the tests revealed a potentially, very, scary future. Elevated antibodies meant my body was attacking itself.

As the nutritional component to autoimmune disease became more and more evident, I decided to focus my attention on educating people about nutrition and the emerging world of functional medicine.

In 2004, I gave my first lecture. Everywhere I go, I continue to get the same response. Wow. I continue to spread my message today.

This message hit my family once more. My 80 year old mother was found conscious but completely incoherent. She was taken to the emergency room and diagnosed with toxic metabolic encephalopathy. It is a neurological disorder that includes hallucinations and irrational conversations caused by toxicity in the bloodstream called sepsis. The doctors said there was nothing that could be done. Just try to make her comfortable. My mom had never been tested, so I ordered tests for her. She had celiac disease. Her body's autoimmune response- exacerbated by the malabsorption, malnutrition and dehydration that often accompany celiac in elderly patients- was causing the symptoms of toxic metabolic encephalopathy. I took her home and began a gluten-free, dairy-free, sugar-free diet, increased her water intake to 3 liters a day, and within weeks, she was feeling better and wanting to drive again.

Eventually, my mother entered hospice care. I woke up my mother from an eight day coma by giving her some herbs. Eight days in a coma. We were going to disconnect the tubes so that she could pass because hospice said it's time. I gave her some herbs one night and a few hours later, she woke up, and she was back. She was back because I'd reduced the inflammation.

We had her for six weeks. Six more weeks at the kitchen table for meals in a wheelchair and conscious and with the family. True story. I was like, "What?" Her body was just too far gone. There was too much damage. You always want to retest. It doesn't matter how you feel. You want to retest to make sure the protocols that you're implementing are working.

It's been a long, strange trip, but I've learned a lot along the way.

You are not a victim. You can take back control of your health, regardless of your diagnosis. Autoimmunity begins with inflammation. CBD reduces inflammation. While you work on discovering where your inflammation is coming from, CBD will help settle those fires down. As you realize the results from eliminating the source of the problem, you should notice a decrease in the amount needed and might even be able to eventually wean off of not only medical marijuana, but the other drugs you may be taking. The Autoimmune Fix can help you get on that path to wellness, and CBD can be a great benefit during your health crisis.

Please Click Below For Your Bonus Gifts:

“Infused Smoothie Recipe Guide - Cannabis & CBD Oil” and
“Bow Wow - CBD Infused Dog Treats and Food Recipes”
And more...

<https://drmaryjanemd.com/bonuses/>

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