Overcome Chronic Fatigue Syndrome By Amplifying Your Immunity Post Covid

Eric Gordon, MD
with **Gary Kaplan, DO**

Eric Gordon, MD
Welcome. Welcome. This is another part of Long Covid and Chronic Fatigue. We are really working on presenting to you all how long covid happens and also what you can do about it and its relationship and similarity to chronic fatigue today. I have a chance to interview Dr. Gary Kaplan. And Gary has done some really, a lot of great work and especially in helping bring clinical research alive and that's a topic that's dear to my heart and we won't talk too much about it today. But I just want to thank him because that is a very difficult thing for people who are practicing medicine to also work with researchers and help really answer the questions that you as patients need answered. And along that way, he's also published a book recently called Why You are Still Sick, which is I think a great book to look for and get some help. The subtitle, I think answers says it all how infections can break your immune system and how you can recover. So we're gonna be doing a little deep dive in some of the underlying risk factors and triggers for winding up with long covid and or chronic fatigue. And talking a little bit about how Dr. Kaplan Gary as well, call them for today has been working retreating along covid. So with that in mind Dr. Kaplan, welcome and tell me how you think about risk factors.

Gary Kaplan, DO
I'm delighted to be here. Thank you for inviting me. It was good seeing you with the island's meeting not too long ago. And the topic here is extremely important and unfortunately a bit complicated, but there's a lot we have to talk about. So I'm anxious to go over this with you. I think just to kind of set up the stage, we have to think of a couple of things. You know, lots of people get illnesses, they get better and they recover. That's the end of it. If we look at things like post roman lyme syndrome, for instance, post lyme syndrome, 80% of people who get the infection recover with treatment and 20% don't. And it becomes a real challenge is to what's going on with those people. And as we work with a lot of these different people. One of the things we find is clearly there's some form of genetics, there's a set up there. We don't

understand that genetics yet. We're coming along and there's a lot of research going on it, but we will find that there is a genetic susceptibility and certainly if you talk to people, you find out that it's not just many people bring their kids to me, but it's not just their kid. If mom also has been sick for a number of years, the brother, the sister has also been sick. And so you start finding these familial patterns where they you see chronic illness becoming a thing within the family, it's not a psychological issue, but rather it's an issue of genetics. The other thing that we have to pay attention to is this concept of epigenetic epigenetic meaning on top of the genes. So things that turn on and off the jeans because we have lots of genes many of them don't actually ever get turned on. Some get turned on overtime. So celiac disease.

About 35% of the population has celiac disease. This is gluten intolerance and has the genetic susceptibility to Celiac disease. But only 3% of those people will ever actually come down with the disease. So something has happened to them over a series of time that has tripped off the genes that now make them have an autoimmune disease to gluten. And indeed we used to think that the diagnosis celiac disease was in childhood because it was a genetic problem. And the fact of the matter is the majority age of diagnosis and celiac disease now is between 40 and 60. So we are whole thinking about what's happening with these conditions is changing.

So epigenetic things. Things are environmental things that have impacted us that set us up for a point at which an infection comes in and then the immune system doesn't respond necessarily in the way we had hoped it would now. The way we hope it would is it will turn on it will do its thing. It'll turn off, it will go back to monitoring things and life is good. What happens in these people with chronic illness and we're going to be focused specifically on M. E. C. S. F. And long haul covid. But the reality of the matter is we're seeing this in the post treatment Lyme syndrome. We certainly see it in the pans pandas kids. We certainly see it. I believe in chronic pain patients is a high percentage of them.

We see it in complex regional pain syndrome. There's a whole array of illnesses fibromyalgia which we have previously diagnosed as kind of separate diseases and because we describe their symptoms and describe and believe we have called a disease. We need to be talking about the path of physiology the underlying cause of this. And I believe linking all of these inclusive of long term neuropsychiatric problems, chronic depression, obsessive compulsive disorders, bipolar disease, these are all neuro inflammatory diseases. All of these across the board, brains are inflamed and so now the question is how do the brain get inflamed? What's perpetuating it and how do we back it out? So that changes our whole perspective in terms of how we're evaluating these people and then how we're going about treating them and we're looking at it more as

peeling layers of an onion as opposed to you have strapped here's your penicillin. You got better go away.

Eric Gordon, MD
Right. This is just beautifully said. I really appreciate that. Nice overview because inflammation, chronic inflammation is the underlying risk factor for chronic disease. Then your genetics will determine what picture you display. You know, are you gonna be the chronic fatigue person? Are you going to be the rheumatoid arthritis person? You know? But it's that chronic inflammation that's there. So how do you go looking at the immune system? How do you break it down? How are you taking that picture apart?

Gary Kaplan, DO
Well, so when we talk about inflammation, the question is, what is inflammation? Okay, so an inflammation is a lot of different things in the body. So we need to be fairly specific when we're talking about. So, if you've got a runny nose and itchy eyes and you have symptoms of hay fever. Alright, that's inflammation. The eyes are swollen, the nasal passages are swollen. The cause of that inflammation is an antigen reaction. Antibody reaction and reaction to hate to pollen. And so you might want to give an antihistamine

Eric Gordon, MD
And just to clarify for people, cause you were going to use a lot of terms antigen means a foreign protein and it can be anything. Okay. But and the antibody is what your b cells make to try to lock up that antigen and identify it. Yeah.

Gary Kaplan, DO
So what happens is now you've got an inflammatory response. But the cause of that is histamine release by mast cells. And so you want to do something that will stabilize those. So antihistamines is a good way to go about doing that. Alternatively you can get shots that will help your immune system recognize these pollens and say, I don't need to be worried about them and begin to stop responding to them. So that would be one way to treat that inflammation if you skin your knee and it gets pussy and swollen. Well, what's going on at that point is not histamine, but what's going on at that point is an infection in the skin. You might want to treat that with an antibiotic and then that will allow it to clear and recover when we talk about inflammation in the brain. We're really talking about the either happening on the innate or the acquired side of the immune system. So there's two great big divisions of the immune system on the innate side of the immune system. These are kind of our first responders. Okay, these are the guys that are rushing in to put out the fire. Alright, there's been damage to cells in

the brain from a concussion. There's been poisoning secondary to, I don't know, heavy metals and mycotoxins. Any of a number of things that have started to do damage to brain cells, stress can also be on this list by the way, but anything that's caused damage to brain cells. So these guys rush out now you want to think of them another way as kind of the demolition crew because you're going to remodel your kitchen. Okay. Bit of a touchy subject for me, because I'm six months in our kitchen is still not livable, but so what happens is you hire the contractor, the the guys coming to do the demolition five days, everything's torn out and the repair crew doesn't come. So now you're left with the kitchen, that's all torn up and nothing going on.

So the next thing though that happens sometimes is the innate immune system gets a little bit haywire and it also goes, hey, you know what, that dining room, maybe we can do something with that also and it starts tearing that up. And then the next thing that happens, it looks at the living room and it starts tearing that up. Well that's your brain. So now it's tearing up different pieces of your brain because the innate immune system has become grossly overactive and is if anything traumatized at times and we actually, you know, I'm speaking metaphorically, but the reality of the matter is the we do see PTSD develop in the innate immune system where it gets hit over and over and over again by different infections and what happens in hyper reactive and then it starts doing lots of damage, that, it should not be doing collateral damage.

We also see it where it can cross react, meaning it got hit and started to respond to one set of damages and then it anticipates damage occurring. So it starts reacting again. So the innate immune system, we want to look in the brain. We're looking essentially at three cells. We're looking at microglia which are by far and away the things that mediate inflammation, essential nervous system the most. We want to look at mass cells okay. Which mediate inflammation both inside and outside the brain. And we want to look at astro sites. We'll put astrocytes aside in a great big hurry because we actually don't understand enough about them.

Astrocytes help make the blood brain barrier, they help feed and nurture the neurons in the brain, but how they interact without question as part of the inflammatory process and feedback loops, but exactly how that occurs is not well understood. So we get to focus primarily on Michael glia and mast cells. So, when we first start off and we're thinking we're looking at, okay, what are the first off? Let's back up even more. Okay, how do I know my brains in flame focus and concentration issues, fatigue. You may have trouble keeping your eyes focused and seeing things that may get blurry headaches, chronic body pain, sleep disturbances, all of these things are signs of a symptoms of a brain that's inflamed, sensitive to light and sound and odors. All of these things are indicative of a brain that's hyper reactive, right? So

Eric Gordon, MD
Just let me just want to emphasize for people the continuum of this. This is one of the problems with medicine is that we don't distinguish between mild we don't we don't acknowledge how mild symptoms can still reflect the same path of physiology of severe symptoms. So the neurologist will look at the patient and say, oh, you know, these symptoms are too mild, there's no inflammation here. Not understanding that inflammation is what causes the mild headache and the severe and the brain fog and the moment, you know, So it's just degrees and how quickly you can turn this on and off. So you're just I'm just mentioning that because it's so frustrating for our patients when they go to dot, when they go to the specialist, they're often ignored because they haven't had a stroke. And so therefore they have they don't have, you know, so therefore

Gary Kaplan, DO
They're really not seizing in front of them. So how serious can it be

Eric Gordon, MD
Exactly keep going.

Gary Kaplan, DO
No, no you're exactly correct. And this is the problem because the patients that I see are very, very sick. And the bottom line is they have neither been seen heard or respected by the profession and many of them suffer ptsd because of the way they have been treated by our colleagues. They're not listening to them and the doctors don't know what to do with them. And mostly they tell them, oh, go see the psychiatrist, oh, you're under stress here. Take a sleeping pill and we end up treating symptoms and symptoms, then start piling on top of one another and the next thing, you know, you have a disabled kid, we have a disabled adult. And so you're absolutely correct. We want to catch this stuff early and pay attention to it early and not get to it later. We'll have to deal with it later when we do.

But the silver lining with covid, if there be any such thing is the fact of the matter is post covid syndrome. One of the predominant symptoms is fatigue. And all of a sudden the medical profession turned around and said, oh wait, you can have fatigue as a real symptom, even though the acute illnesses gone. Huh? Who knew that? Well. The one or two million people suffering with M. A. C. S. F. Knew that and spend ignored for a long time. You know, just as an aside, I served on the advisory committee and health and human services for four years on M. E. C. S. F. And one of the truly shocking things I discovered on that committee was we, NIH was

devoting $5 million a year to the study of Emi CSF. In perspective, we're talking 1 to 2 million people struggling with this disease, 25% of whom are bedridden and completely disabled with this disease. And NIH is spending $5 million on research, which is in the vernacular Bupkis if you have multiple sclerosis, NIH was spending 100 and 35 year for three quarters of a million people suffering with the disease. The numbers didn't add up basically. Any CSF was dismissed for years until finally the C. D. C. I think around 2018 said oh yeah it's a real disease and the P two P. That happened and so it got acknowledged at least as a real problem. The problem still remains is that we're looking at as a unique disease as opposed to looking more at the path of physiology. And the path of physiology is inflammation in the brain.

And so again, we step back to the innate immune system. Now the reason I'm talking about that is because if we know the pieces of the immune system we're targeting. We can understand the cells in particular. We can then say, okay, what is it that sets off causes a micro glia to become an inflammatory cells. Because microbes leah's main job is to kind of sit monitor, make sure no bad things are going on. And if bad things are happening, the microbe to go to the area, they get rid of all the damaged cells. They call in the repair crew and they leave, that's their job on and off, just make sure everything's clean up the streets, make sure everything's staying okay.

But when they get over reactive they spew out a whole series of chemicals and reactive nitrogen species, oxygen species. They start doing blow up cells and they can be turned on either by cell damage. So in cell damage, things that are inside the neurons come out into the surrounding fluid, the micro perceive those and then they start to react and go to the Arab damage. The concussion will certainly accomplish that. Alternatively, if you get an infection that comes into the area such as live disease or such as a viral infection herpes encephalitis, there's such the micro glitter will immediately start to respond in order to it becomes a macrophage and it can actually not just blow up the invading virus or bacteria but will actually engulf it and try and get rid of it. So, micro we are really versatile little guys and it's important for us to understand that because when you look at that, you go, okay, what is it that sets off a micro concussions? Obviously brain doing physical damage to the brain, but so will stress.

Okay, long term stress in particular. And if we look at kids who grew up in a very difficult environment, abuse and neglect. What we find is about they are about 15% more vulnerable to developing autoimmune diseases later in life. They're about 25% more vulnerable to developing cardiovascular disease later in life. There's a whole series of diseases that they are more susceptible to because their entire inflammatory system has been set on edge and it's doing damage to the epithelium of the blood vessels. It's doing damage to the brain. And so there's a lot of problems that these kids are set up for now. We can reverse that by addressing that

trauma. But that trauma, we also want to make sure we don't mistake for what your your problem is, your fatigue because of the pTSD. Maybe that may be part of that unquestionably may be an issue, but it also may be the set up for what happened when the infection came along and the infection came along and then really capacity and damage to the immune system.

Eric Gordon, MD
And what I want to emphasize, what I think is really important is that it's not the PTSD that causes the damage as much as you need. The whether it be genetic or characterological basis for those things to cause damage. Because, you know, I always I mean, we see this all the time. People who have obsessive compulsive disorders and they'll go back and say, well, it was because this and this happened when I was a child and go, no, you have obsessive compulsive disorder. Because you have a gin, The genetics that when your brain gets inflamed, this is how you try to defend yourself. You know, this is self defense.

Because, you know, we psychology, working on yourself to hell change your behaviors is really important. But don't spend your life trying to figure out what caused it because you wind up blaming people instead of realizing that this is who I am and what I have to do next. So there's a place for understanding but don't get caught there. I always worry about because what your point you're making is just so important. That it's the inflammation. That is the match or is the fire? Yeah. That you know with the Tinder is your genetics and your environment? Okay. I'm sorry. It's just,

Gary Kaplan, DO
No, no you're absolutely correct and it's an extremely important point because we get into this thing where it's like, well, you have pTSd and we dismiss you at that point as opposed to going back up and especially with kids who are having obsessive compulsive disorders. You gotta back up altogether. Okay. When did this start? And so when we take histories, we take histories. Kind of going back to birth. You were in excellent health until when. And the very first thing, pretty much all my patients do is lie to me. I was in excellent health until I was 19 or 25 years old when I got this infection. And part of that, I was 100% really great. Okay. And I started going through the history and I said, oh, you have migraines. When did the migraines start? I started migraines when I was 12. Okay. How often you get the migrants The migraines are 56 times eight times 10 times a year. That's been a problem. Okay fine. Did you have a lot of strep infections as a kid? I had strep infections all the time. I had tubes in my ears. And so you start now you're getting this history of repetitive assaults on the system and you're also getting a hint that you had a lot of strep infections. When did the O. C. D start? Right If the O. C. D. Started when you were eight,

maybe the problem is strapping. You've got pandas. So we want to say we want to pay attention to how when you're getting sick the timeline that things are happening and what the setup is to begin with my intake history is about two hours long literally. I mean it takes a long time to start to take this apart to get understanding of what's going on. And by virtue of doing that we end up with a much more complete answer. So

Eric Gordon, MD
I think I took you off. I apologize. So getting but because you were talking about the innate immune system and its effect on the brain which is really just so important for obviously long covid.

Gary Kaplan, DO
Right? So we also want to be looking at whether or not you have exposure to toxins we find a very high percentage of our patients can't process mold toxins and they have toxins build in their body. We find the percentage of our patients have heavy metals that have done damage to the neural system and mercury and lead being the leaders, occasionally we'll see arsenic and that's inevitably from groundwater. Mercury is coming from fish. Unfortunately, we've soiled the nest and so if you're eating swordfish and tuna and trout, a lot of the top feeders we've been finding in the salmon now on a regular basis.

Sometimes the easy way to get rid of the lead is simply stop eating the fish or the mercury lead typically is coming from paint. And we saw an outbreak of lead poisoning in new Orleans after hurricane Katrina when they started fixing up these old mansions, which they were sandblasting them in the next thing. You know, they were vaporizing all of the lead paint in the air and the kids were ending up with lead toxicity. Lead is also unfortunately very prevalent in our water supplies in this country. We saw, you know, the big fuss that got made in Michigan with flint, Michigan, huge, massive problems.

Okay, but the reality of the matter is there's a very high percentage of our water supply in this country which is contaminated with lead. And so you need to be looking at the water and testing for these kind of things if you're drinking well, water arsenic is certainly a possibility. So those are the three big ones, cadmium. If we run into it, it's typically because people smoking cigarettes, which they're trying to kill themselves anyway. So perhaps just another way of going about doing it. But so you've got to pay attention to that. We have seen one or two people, unfortunately there was a series of joint replacements that broke down and ended up with chromium poisoning. And that's a whole bear to take care of. So we want to be looking for, you know what other things are potentially in the system that are creating problems. And so we're

kind of going through the history and looking for that and testing for it as we go along. Go ahead.

Eric Gordon, MD
No, no. So I'm just so because these are, you know, our underlying stressors that you're laying out are really what we see because you know, it's just like M. E. C. F. S. I think with Long Covid was seeing the same thing where people come in and often say, you know, I was healthy till and it's only when you do the detailed history from, you know, I'm not saying it's 100% but almost everybody you'll go back and you'll find that there were the old infections, You know, the that put them down for a month. You know when they were 18 or you know, the dental work that hadn't been fixed or you know, some history migraines especially these hints that the immune system is not self regulating as well as it should. So, and you were going to with the in a how do you weave that together with the acquired immune function and and and how they dance together.

Gary Kaplan, DO
So the acquired immune system are the smart guys. Okay, supposedly they're the guys who learn how to fight a particular infection. That's why we give immunization, we give you an immunization, flu immunization and we teach your immune system to go fight this bug and it shows up. But this bug, not six other bugs. This bug in particular. So the innate immune system targets very specific things. And hopefully nothing else. There is a questionably, some wash over meaning that sometimes when we give immunizations. For one thing, we'll see some protection that also occurs for a couple of other bugs, but it's not as strong as the one we specifically immunize for. But the problem comes in when you've got an infection that turns on the innate immune system and the innate immune system becomes over reactive. And there's a couple of process is the most common one is a thing called molecular mimicry.

And so what happens is there are codes on the outside of a bug that the immune system, the B cells are targeted to and that code can look very similar to our own proteins in different tissues in our body, specifically the brain. So as it's going after that, it can get confused and say, you know what, Yeah, this is the bug we want to kill. But these tissues over here have a very similar look to them. We're gonna kill that too. The next thing that's happening is now your brain is being inflamed. The very fancy name for that is autoimmune encephalopathy of infectious ideology. We have a process where your own immune system has now started to attack your brain because it got confused by an infection that started the process. That's a whole another thing now, there is cross communication between the innate and the acquired immune system and one can regulate or up regulate the other. And so you have to be paying attention to both at the same time. And you need once the point that the acquired immune system is tripped off, we

have a bigger problem if it's just on the innate side is actually relatively easy to address. If it's once the acquired immune system is kicked in, we have a much tougher time because we need a whole bunch of fancier tools in order to be able to address it and we don't always have access to those because, limitations that the insurance companies imposed on us.

Eric Gordon, MD
So when let's just jump a little bit and we'll come back to ideology, but how do you approach long Covid these days? What's your, you know, your favorites.

Gary Kaplan, DO
So, with long covid the first thing is, you know, history, history, history, get your diagnosis and get clear that that's what you're treating. But if it's a relatively clean case, I was I really was healthy until I got Covid. And the next thing, you know, I'm still floating around with fatigue and brain fog and headaches and I've got tinnitus ringing in my ears. There's a whole list of things that got gastrointestinal problems. Whole list of things that we see in long cove. And by the way, the new studies coming out are showing that upwards of two thirds of people may have long covid symptoms. We have now gotten to the point where we're defining long covid as per symptoms that persist past three months.

What other infection do we have that? We say, well, you know, after three months then we've decided you're better. We're seeing that a high percentage of people have symptoms that persist for three months and perhaps as many as 50% persist for over three months. So long Covid officially starts three months after you had the infection. If you're still having symptoms and a huge number of people still have those symptoms and a huge number of people are and they're not necessarily debilitating though certainly a percentage of them are. But most of them are neurologic symptoms. Some are cardiac, those are too far and away. The two biggest things that we see.

So you can see inflammation of the heart muscle itself, that persists or you can see inflammation of the heart muscle that occurs after the infection is gone. So, these symptoms may actually have originally gotten better and then show back up several weeks, just a couple of months after you have the original infection, fatigue. Everything we talked about before in terms of headaches and focus and concentration issues. But the high percentage of people have neurologic issues and that's chronic fatigue. And so that's been the boon in terms of research for the any CSF population, but it's a freaking disaster for those who are struggling with it. And in fact, I just talked to one of my best friends last night. He and I were in Alaska together and I both got Covid while we were in Alaska together several months ago, he's still having trouble with word finding,

he's having trouble with short term memory issues. This is a very bright, accomplished guy. And he said, you know, I've been covering it up, but until we talked the other day, he said, I didn't realize that this was long

Eric Gordon, MD
He wasn't getting older right here so fast. That was a little aging acceleration. That whatever, well, that's what inflammation is on some level, you know, as well. Yeah, so, when you see these things, I mean, because the what always is good and bad about medicine is that, you know, when it comes to acute disease, we count on the fact that most people get better within six weeks, no matter what we do. Okay. No, which is right. Right, luckily, you know, and with long covid, it looks like in some of the numbers that by, you know, by six months and a year, a lot of people do eventually get better, but we're still left with a fair number of people who are having persistent neurologic symptoms. And so where do you start as far as therapies? I mean, what's your favorite checklist? So to speak of how you work down for the person with, let's say you know, moderate fatigue enough that it's interfering with life. They're not bed bound, but you know, they can't go back to their full lives. They have to like, they're working on the 4 to 6 hour day now, instead of

Gary Kaplan, DO
Right. Clearly some basic blood work, we want to check your blood count. We want to check your liver and kidney functions. We want to check your thyroid. We want to check whether or not there is another autoimmune process going on. So checking an anti nuclear antigen, we check said rate and crp just basic stuff, simple stuff. The other thing that we do is we do a cytokine panel. And so the cytokine panel was developed by Bruce. Hello.

Eric Gordon, MD
Patterson

Gary Kaplan, DO
Patterson, thank you. Thank you. I was getting I was getting maybe I've got one, you know, I was getting stuck on another Bruce who work in an acupuncture. But Bruce Patterson developed the long haul covid panel. We've been using that for well over a year now, and it gives us some insights as to specific inflammatory molecules, proteins that are active over reactive in the system. And if we see this kind of a pattern coming out, then we turn around and go, okay, we have specific medications that we that we use to treat this. So understand none of this is approved by the FDA, understand that this is all off label. Okay, so, but the medications that will frequently use it sells entry or a rock we use aspirin, 81 mg can be helpful. We can use

pravastatin, one of the statin medications which actually helps reduce certain side all kinds. And so we have very specific medications that we can use that have in fact been effective for us. They have proven to be effective for us. Big controlled studies. No, we don't have big controlled studies. We have a lot of clinical experience. We know that these are fairly safe medications to be to use we're not seeing a lot of side effects with them. And more importantly, as we're seeing success with them. So that's one way to go about doing it. We have been using low dose naltrexone. Low dose tracks on specifically targets the Michael glia in the central nervous system. That is the innate immune system. And indeed, a paper just came out the other day that said, oh, you know what load arsenal tracks, It looks like it may be effective in treating long haul covid. So it's safe and simple.

Now. What is low dose naltrexone so now tracks on is a medication that we used for treatment of oh, drug overdose in high doses, maybe 50 75 mg. Low dose meaning somewhere between 1.25 and 4.25 mg. Is what we used to quiet the activity of the microglia in order to sedate them then. And so using that in conjunction with some of these other medications and was originally developed to help HIV patients and that was the original design. So we repurposed drugs, but we use off label use of drugs is something we do all the time in medicine Anyway. Nothing at all unusual about that. Ellenville is used to treat migraines. Ellenville is used, which is an antidepressant is used to treat sleep disturbances. Ellenville is used to treat their old bowel syndrome. So, off news label of medications. Repurposing of medication isn't unusual in medicine, but we do what

Eric Gordon, MD
You say, it's actually necessary in order to practice medicine because the cost to get a medicine approved for an indication is now easily in the 52 to several $100 million depending on how hard you want to work at it. And that's even and even if it's not a new medicine, I mean LDN low dose naltrexone is a very good example of you know, we started using I think the late nineties for people with HIV and autoimmune and then autoimmune diseases. And it's only in the last, I think, I don't know, maybe 5 to 7 years that the rheumatologists have stumbled upon it after we've been using it forever and being derided for it, I must say.

And now somehow, yeah, somehow the the the the medical community has like founded and they're using it for, you know, interstitial cystitis, you know I mean because it does reduce inflammation and like you say, when it reduces inflammation in the microglia, well the brain does modulate the rest of the immune system and it I just want to bring that out for people who are concerned about off label use of drugs. They have to understand that the on label use of drugs would limit even a conventional doctor to you know, to to doing what I call the simplest of

Band aid medicine, which is yes, you have some hypertensive and some anti diabetics and a few pain medicines you know, and after that, everything else is off label. So people please understand that this isn't doing wild and wacky things, you know, and but so, getting back to your experience with Dr. Patterson's work because hopefully he we're going to have Dr. Patterson present, how he developed his panel. And you know, because I think it's again, it's not the end all and be all, but it is a piece of evidence that is giving us information, I think more and more information more than evidence to to work with the immune system a little bit more specifically, maybe then we've been able to in the past, you know, so your experience, have, you had you know, you noticed that the morale because more of a rock I guess is the point that I is that most people are afraid of because it was approved as an HIV drug. And there was originally a black box warning, which I think we can fairly say was an error. You know, there was, you know, there was really no need for that subsequent what, 15 years it's been used something like that now. Yeah, I don't. Yeah,

Gary Kaplan, DO
So, it's just our experiences, we see, you know, we do proper monitoring, will look at liver and kidney function and blood count to make sure nothing is going awry. We're in constant communication with our patients. But the reality of the matter is knock on wood so far. We have seen next to no problems with the drug. Are there people who are occasionally intolerant to it. Absolutely, positively there are people who are intolerant to penicillin. So you need to be doing this responsibly. But the reality of the matter is we have seen both well tolerance of the medication and we've seen results from the medication. Now. Caveat rob Iraq is a strange drug, strange in the terms of the way the insurance company treats it For some Godforsaken reasons for a Barack cost our patients anywhere from nothing to $2800 a month.

Eric Gordon, MD
Yeah, I've always gotten around 17 to 13. But you must have a really high price.

Gary Kaplan, DO
Somebody, somebody that this was the brand new, high the other day when a patient came in said it was gonna cost $2800. So you know, we look at discount coupons, we do look as much as possible to be able to help our patients get access to the drugs so that it's not costing them an arm. And like because they're going to need to be on the drug for several months, it looks like probably about 3 to 6 months is normal treatment time for a very straightforward case of post covid syndrome. And so people will see impact from taking these medications within about within certainly within six weeks, but more commonly within 2 to 3 weeks we see our patients starting to report that they feel better. Their energy is better to sleep is better less focus and

concentration issues. So it works, it is effective. And so that's kind of our first line now we add some supplements that also. So we want to do things that will help with detoxification in the brain. And so we use glutathione and we'll use nsc the Sistine and see the Sistine actually helps the brain make glutathione. And so we know that there's some early a couple of papers suggesting that the people who were dying were dying because they had essentially glorify on deficiencies and that if we gave them I? Ve during the illness they recovered small papers, small case studies. But nevertheless the suggestion was there, it's a shame that the largest studies were not done. One of the things inhibiting the largest studies is how much money gonna make if they proved the drug to be correct. And the answer is next to nothing.

Eric Gordon, MD
Yeah. So we forget that they gave remdesivir what? 800 million $900 million just to start off to see what happens turned out maybe not a bad acute drug. It didn't do anything for really sick people. And you know I'm sorry my little soapbox. But they draw they tried to draw and quarter anybody who tried to use ivy, vitamin C. Or ivy glutathione which are cheap and can't hurt you almost since they can't hurt you never should say can't hurt you. There's always some people you can hurt but 99.9% we don't hurt many. Anyway that's

Gary Kaplan, DO
You're absolutely correct. And then some of the other things like low dose melatonin 123 mg is a nice antioxidant in the central nervous system. Can be a nice antioxidant. So these are things that help with the detoxification. I think the other thing that we want to pay really strict attention to is sleep. Sleep is really critical and people think about, you know, getting by on five hours sleep. That's a good way to set yourself up to get sick. Why a couple of reasons. One is a great study just came out and from Mount Sinai in the last couple of weeks looking at the impact of sleep on the immune system and having an adequate sleep actually is a setup for immune deficiencies, meaning immune dysregulation in terms of its response to things.

So sleep is really important. The other thing that sleep does is it's the way the brain detoxify eyes. And so it's the way that it gets rid of metabolic waste products. And so literally your brain swells during the day because hopefully you're thinking. But as it acts it's the most metabolically active organ in the body when things are working. They produce waste products and so what happens is at night especially during slow wave sleep stage 34 sleep. What happens is you actually get the recreation of these lymphatic like channels called lymphatic that are the drainage ditches that allow all of this stuff to go away. So sleep is absolutely crucial in terms of helping us stay healthy and also recover when we do get sick. And specifically preservation to stage 34 sleep. Which brings up the point that if you're taking sleeping pills, they don't preserve stage 34 sleep,

they just get you more sleep. But if you're not getting the right stages of sleep and quality of sleep, that's going to create a problem for you. So it's important that the architecture of sleep stages 234. And where am rapid eye movement sleep are preserved in the ratios that they belong preserved in also we need to pay attention. There's about 5% of the population who have sleep apnea. That's where people stop breathing at night. That makes the brain lose oxygen. Hypoxia is a lovely way to kill brain cells. And indeed, if you have sleep apnea and it's not treated, it's gonna take about 10 years off your life. And how do you know if you have sleep apnea, you're falling asleep during the day, you're falling asleep after lunch.

You're falling asleep during meetings. You're falling asleep sitting at stoplights. Yes so you need you know you need to be, there's a thing called the Epworth scale E. P. W. R. Th it's a quick questionnaire that you can do online. And if you're scoring nine or more above on that you need to talk to your doctor and say, you know, I did this, I found this. What do you think And get them to pay attention to you? Because worst thing is if you've got sleep apnea and 85% of people with sleep apnea are not yet diagnosed. If you take sleeping pills, your sleep apnea, eating the lack of oxygen going to your brain is going to get worse. So sleep is really crucial. The other thing I want to say that's really crucial in terms of keeping your brain healthy is your diet. And so we haven't talked about this. It's a great big topic all onto itself.

But the reality of the matter is there is a direct relationship between the health of our God and the health of our brain. And so that if we're not taking good care of our gut, we are not taking good care of our brain. The brains inflamed the guts inflamed the guts inflamed the brain's inflamed. So we need to be very careful and so early on when people come to me and they're saying I put them on what's called the apologetic diet. Rice, fish, chicken, fresh fruits and vegetables have eliminated soy have illuminated gluten. I've eliminated nuts and corn.

I want to take as many potential allergens out of the diet so that I can get that quieted down now frequently, we have to do more in order to help their guts. But the reality of the matter is we pay a lot of attention to gut health. We have a nutritionist as part of our staff in order to be able to help people recover. So there's lots of things you can do that aren't expensive, that are pretty straightforward and are entirely in your hands. Meditation is a nice way to reduce inflammation in the central nervous system. So doing meditation on a regular basis is a really great thing to do. The other thing that becomes a little more problematic if your problem is fatigued is exercise, but exercise is hands down probably the single best anti-inflammatory in the body and the central nervous system, both aerobic and anaerobic exercises.

Eric Gordon, MD
Yeah. And I just think again to point out, you know, is that this is the well, the in and the young, the push and pull nature of life. Okay. Is that you in order to be strong, you have to exercise but you have to rest in order to relax. You have to have transient stress. Okay? If you don't, if you just have relaxation, you have decay, it's just how the system works. Your immune system has to start and stop. If it just stops, you're gonna die from the infection. And if it can't stop, you're gonna die from your body's reaction to the infection. So, yeah, it's just it's just something that because, you know, we grow up, I guess, I guess our brains are kind of set up for what I call, you know that linear engineer type, thinking, you know, A causes B. And that's it. And what you were talking about how important the gut is to the brain is because they talk to each other that back and forth communication with involving the vagus nerve, which we've had.

We'll have some other talks on during this series is just so important. So, I mean, I love what you're doing basically. It's, you know, the treatment of Long Covid is basically the treatment of chronic fatigue with a little bit more specifics because we were lucky enough that you know, for some reason, I guess it's because how many people got sick at once? That enough, that we're getting some more some really exciting research. It's coming up from chronic fatigue world, but it's the chronic fatigue research has been so slow to be you know, there's okay, I'm going on a rant, but just a very short short. There are so many great papers that have been written about chronic fatigue in the last, I mean, really that great ideas.

But then there's never the money to do the next step and do something with them, okay to take something that we did in 20 patients and then say okay now we're gonna do it in 100 and then we're going to do it in 500 or 1000 to actually prove to the medical world that this stuff works and there's never the resources so we keep spending resources on getting good ideas, learning little pieces but never moving forward because of lack of resources. And I know that it's very hard for patients who are sick to understand.

But It is, as you said in the beginning when you're going to spend $5 million to $5 million dollars a year is enough to support maybe one researcher completely. It's not enough, you know these anyway, so but one thing I wanted to get to before we ended. I know and this might be a little bit of a non secretary at this point but I would love to hear you said you had some ideas on persistence and I just want to and I just want to put this out to our audience and understand one of the great questions and maybe we'll have some more clear answers by the time we air because we're recording this in October and we're airing in February. So is something that's bedeviled. The chronic fatigue world and the research is their persistence of the trigger or is it

just immune memory and you know that's happening and you know, and again there's evidence, there's little bits of evidence. And then every time the evidence comes in that maybe it is persistence people say, well really, maybe it's just a piece of the bug that is being produced. Anyway, I'm going to shut up and let the good Dr. Kaplan tell me his story and his understanding of where we are today with persistence of some of these triggers.

Gary Kaplan, DO
So let me just do a quick plug, we my Foundation Foundation for Total Recovery and Georgetown University did a international conference in February of this year. Just talk about these kind of issues. And we're going to do another conference October 11, 12, 13 next year, in which one of the big topics is going to be on per sisters because it is such an important topic. And so what is a persistent, basically, it falls into one of two categories that is pieces of bug that are still around that are annoying the nervous, the immune system and keeping it reactive and replicable bug that is living bugs that are still around replicating in the system. Perhaps hiding in different unique locations in the tissues such as in the joint tissue or hiding in biofilms that are making it much harder for the immune system to get at.

And this is a big challenging problem in terms of post Covid Bruce's argument is that if the spike protein that's still there and what it's done is it's damaged a particular type of immune cell in the periphery, the what's called the nonclassical mono site. So it's a white cell that has two things have happened to it. The spike protein has both turned it into a zombie cell, meaning that sells normally have a lifespan. They live for five days, they die, they move things move on. So if that were the case, these mono sites after five days should be done and we shouldn't have any more problems. It's not the case. So he argues that there is persistence of the mono sites because they're normal cycle of death has been just completely disrupted by the spike protein and that these mono sites are now spewing out all of these inflammatory factors, specifically the cytokine patterns that he's identified now.

So what we aim to do is we aim at the non classical model site in order to shut that down in order to be able to get rid of the symptoms of the problem. Simple enough. Would that it were. So it does work in some people without question. I want to say, also that we've done research with Bruce's group where we fed a bunch of our patients. And so this is not just because we treat chronic illness, right? We treat chronic fatigue, we treat post treatment Lyme, all of these, this mishmash of things, which we regard as your inflammatory diseases. And we have found that when we look at their cytokine patterns, there are different cytokine patterns that seem to fall out for people who have any CSF for people who post treatment Lyme syndrome, post treatment who have post vaccination syndrome. So different cytokine patterns would suggest

different cell lines that have been damaged. And this is early research and it's not published yet but it's giving us a hint that there are clearly distinct cytokine patterns and cytokines might be good markets for us. So that's one piece of what we're looking at in M. A. C. S. F. One of the things we focused on is reactivation of herpes viruses specifically Epstein Barr. Epstein Barr. We know it lives in the system. How do we know it lives in the system? Because you get not Epstein Barr specifically, but the herpes viruses as the family you get chicken pox when you're little and then you get shingles when you're older. The only thing shingles is the chickenpox virus that was living in the dorsal root ganglia, the nerve and crawls out under the right circumstances and then erupts on your skin causing pain and nerve damage.

So we know that viruses can persist in the body in a quiescent stage and then get reactivated at times and that may be setting off the immune system. So with emi CSF we look at specifically Epstein Barr and indeed we see what we believe is reactivation of Epstein Barr in a number of these patients, it is still a challenge as to how you diagnose reactivation of Epstein Barr and what you look for. And there's arguments to that. We look specifically for reactivation of the I. G. G. Early antigen, specifically that one because there are several others. And we believe that that suggests that there's a reactivation the system. There are others who say you need PcR testing to prove that the bug is active. But it gets into very technical arguments.

And unfortunately the patients get lost in them because there's a point at which you go, let's see if we treat this if you get back. So and C. M. V. Can do it in toxoplasmosis can do it. Influenza could have set off the problem. So there's a lot of different bugs that can be the problem. And there's also the possibility that you missed the diagnosis altogether that the patient in line and we certainly see a large number were in the Northeast. We certainly see a large number of our patients where there was a failure to diagnose Lyme disease in these patients because the wrong test was done and line can be a challenging tested, challenging bug to diagnose. So you've got to start trying to understand if you can identify the bug that's active. Is it replicating and then kill it. You gotta go kill it. If you've got active lime in your system treating the symptoms and treating your inflation without treating.

And in fact, we know very bad treating suppressing the immune system in a case where you've got an active Lyme infection. Very bad idea. So you need to make sure that in fact that lime or other tick borne diseases such as Bardella Plaza, those things you have to look for. So you've got to be, you've got to be very thorough in looking for what's going on and see if you've got active bug and whether or not or you if you can't prove that, then the suggestion is you have inactive bug sitting there still aggravating the system strep can persist in the tonsils for God knows how long and can be an ongoing problem with people having what we call these pants panda

symptoms? Except the problem I have with pants band is the P which is pediatric. I see these same problems occurring by adults.

Eric Gordon, MD
Yeah, well, that's you know, gave people a good introduction to this conundrum that hopefully you know, that's again one of the gifts of of covid is and long covid is that there's more and more work being done to help define you know, is it just a particle or are there actually places in the body where the virus can hide in a fairly dormant state, which is different because I said for the herpes viruses, we they all agree that this is possible reactivation for the RNA viruses, it will be that that's been the big question. Is there a place, I remember Dr. Kia who has worked with chronic fatigue for 20 something years really feels that does happen in a subset of patients. And I think that's I think what everybody has to remember.

The point that I always want to emphasize is that our patients, patients with chronic inflammatory diseases, whatever flavor they are, they are individuals. And it's an individual presentation. And I know that's something that you are very just from how you describe your work very much a believer in. And unfortunately medicine wants everybody to be kind of the same and you're only and I've said this before, we're really much alike when we near death, you know, if you've got something that's gonna kill you, we can treat you all alike and we're gonna do great. But when you have something that makes you not feel well, it really is about you. And then the dance about what is needed is gonna depend on the individual.

So anyway, really, and I just want to recommend people you know, your book lays out a lot of straightforward ways of understanding this and also you've been very generous with laying out a lot of first steps of working through you know, because and I think that's so important because, you know, when people one of the complaints and it's true that, you know, seeing doctors who work like you and I work, it's expensive. But the beauty of your book is you lay out a lot of the first steps that people can do themselves and you know, you can they'll see how far they get because that, you know, I the last thing I want to do is someone to spend the resources to see me when what they needed to do was change their diet,

Gary Kaplan, DO
Right.

Eric Gordon, MD
And that's what I take care of that before.

Gary Kaplan, DO
And what I did in the book was there's a ton of references, several 100 references that I put in the book. Why? Because I want your doctor to know that there's research behind all of this stuff. We didn't just make it up And so they can get comfortable with the fact that there is research backing this up and that you should be treated appropriately. There's only a couple of us running around Eric. This is the problem who do work the way we do and we need to get this information and as many people's hands as possible because there's millions of people. Indeed the numbers look 20 mil

Eric Gordon, MD
It's just it I still haven't gotten my head around the numbers smarter people than me keep telling me that, you know, one of the reasons there's nobody that a lot of jobs are lacking is because there's so many people who have left the workforce because of this long haul covid. And that's frightening. You know, just to think because it's not going away. I mean, that is the thing that, you know, maybe we have, you know, yeah, I can go on about how the disease seems to have modified. We're not seeing. At least I'm not finding, my patients aren't going as much into that second week. Really severe inflammatory state like they did in Delta, you know, in the beginning. You know, thank God. You know, we're not seeing. But still enough people are winding up in the hospital that it's not over.

Gary Kaplan, DO
This is not by any stretch of the imagination.

Eric Gordon, MD
No, this spike protein is does things that we're not used to.

Gary Kaplan, DO
No, you're absolutely correct. It's called the novel corona virus because our bodies have never seen it before. And it's not quite sure how to respond to it. The end result of which is we're seeing this long haul stuff in millions of people. So, it's a very serious disease. We need to take it seriously. You need to do what you can to stay safe and not get the disease to begin with. And then you need to make sure you're taking appropriate steps if you do get sick to recover as much as possible.

Eric Gordon, MD
On that note, I just wanna thank you again. It's been a pleasure. And I look forward to, you know, continuing to hear what you're doing and support your work.