



## Episode 60:

### Managing the Energy Crisis in Long Haul Covid with Gez Medinger and Evan H. Hirsch, MD

[00:00:08] **Evan H. Hirsch, MD:** Hey, everybody. Welcome back to the Energy MD podcast. I'm so glad that you're here with me today because today we're gonna be talking about long COVID very much from the patient perspective and patient advocacy. So as you guys know, when I talk, if you've heard me speak about, fatigue and about some of these different infections, Everybody who has low energy has about 20 plus different causes.

And one of them, the newest comer on the block unfortunately, is COVID leading into long COVID or long haul COVID. So today we're gonna be speaking with Gez Medinger and so let's learn a little bit about him. So he's an investigative science journalist and patient advocate for long COVID. He was a filmmaker and marathon runner when he became ill with COVID in the early days of the pandemic. When he didn't recover, Gez put his efforts into researching the novel condition of long COVID interviewing some of the world's leading clinicians and turning his YouTube channel into a huge resource for patients. Conducting over a dozen patient led studies, which have been quoted in the global press, including the New York times, the new scientist and men's health.

In the process, he has built a worldwide community and his YouTube videos currently have over 5 million views. I have a nber of those views by the way, his book, The Long COVID Handbook will be released by penguin books on October 20th. So in about a month from now on Amazon, and you can actually pre-order the book right now.

Gez thanks so much for coming to speak with us today.

[00:01:41] **Gez Medinger:** Absolute pleasure. Thank you for having me.

[00:01:43] **Evan H. Hirsch, MD:** Yeah. So let's start off talking a little bit about your story. I don't wanna spend too much time on it, but if you could just share a little bit about your journey, which brought you to this point.

[00:01:54] **Gez Medinger:** So, I mean, it was unexpected.

It wasn't the direction I was expecting to be heading in, in March, 2020. but then I think a lot of our directions have changed since then. , so I, I was actually just in the process of setting up a YouTube channel, which was gonna be about running and classic cars of all things. , because , I was just about to finish my training block for the London marathon.

I was in the best shape ever. I was on target to run two hours 50. So, you know, I felt absolutely fantastic. , and then COVID came along, everybody I knew around me, caught it in London and sort of early mid-March. , and at the time you were supposed to either go to hospital or get better in a week, and those were the two outcomes.

, and then this third outcome of not getting better or alternatively getting better and then getting worse, again, just nobody knew about that, right. Because it's a brand new disease. , and, , so , so when I found myself not getting better, I was like, I wonder if there were other people also like me not getting better.

And I think the real sort of, , the moment when I, it clicked for me that something was going on here was when I had a very specific sort of symptom combination in my sort of throat and chest, which I'd only experienced once in my life before, continually over a course of a year after glandular fever, as EBV as you guys referred to it, Epstein-Barr. and I was ill for a year with postviral fatigue then, the age of 20. And, hadn't had it, I recovered completely after a year and I hadn't felt this feeling again for 20 years until I got COVID. and about four or five weeks after I felt this feeling and I thought, oh my God. This, am I looking at another year of being unwell here.

So, that sent me off down a little rabbit hole of, of sort of looking at, you know, the various different, , papers, which had been published around what we knew about postviral fatigue. And then what we knew about SARS 1, but even the emerging science around SARS 2. And I thought, you know what, I'll just put a little bit of a, sort of an academic film looking at these two things together.

Put it up my YouTube channel. I had like 600 subscribers. I don't know if anyone's gonna watch it or find it, but immediately, like as soon as I put it up, there were tens hundreds of thousands of people all coming along and saying, I'm exactly the same. I'm in exactly the same boat. I'm not getting better.

And, and that was sort of the start of the journey for me. And as I found the audience grew, I found I had this position where I could and as well, myself, but also the patient community had all of these questions about what was going on. And, you know, the medical establishment was still, they weren't even scratching their heads because they were just basically.

You know, just telling people that had anxiety or that, you know, oh, it's just a virus. You'll recover. It takes a little while, you know, but, , but the severity of how people were feeling was a little bit more than just being, you know, a bit tired after flu, you know, so, so I found, I had this opportunity to actually use the audience I had and together with me to sort of create this sort of, sort of two-way sort of directional relationship.

I could get questions from them that they wanted to ask. I could ask them back to the assembled audience and get end nbers in the thousands within just a few days. , and, and get these incredibly powerful data sets. , when, you know, when, this was still a time when long COVID as a, as a term, I mean, you guys call it well, some of the clinicians have there call it post-acute Qualia of COVID PAs and stuff.

We call it long COVID. Those terms hadn't even been coined yet, you know, mm-hmm and, and, and here we were, and I was able to look. Questions people had, which are like, why am I testing negative for antibodies? And my doctor telling me I haven't had COVID therefore I can't possibly have some kind of post COVID thing.

And so I was like, well, why is everyone testing negative for antibodies? So, you know, I did a , survey just asking the people which test they'd had, how long after their acute infection that had the antibody test. And then what their results were. And I crunched all of this data and discovered that yes, , long haulers were testing positive only 22% of the time for antibodies, versus about 50% of the time for people who cleared the virus quickly.

And about 80% of the time for people who are asymptomatic and that suddenly tells you, well, there's something funky about the immune response here. , amongst other things. And Hey Presto, the 18 months later, we have papers being published in journals. Basically replicating these same results, showing that yes, antibody responses are difference in long haulers.

So that's just one example, but you know, that, that was just one series of questions, but there were dozens, you know, so that was sort of what sort of kept me going in terms of doing the patient ed research, and then interviewing everybody I could find who had some angle on the condition from their X level of expertise, which could help us.

So, yeah, it's been a long journey and I'm now 80 something films in, 80 something, YouTube videos. So, yeah and, and now just finished writing the book, which will be released next month. So that might be a slightly longer answer than you were looking for, but the potted smary.

[00:07:03] **Evan H. Hirsch, MD:** Yeah, thank you for, for all the work that you've done.

You were actually one of the first things that, one of the first resources that I found when I started to learn about long COVID. So I was always excited for the next video that was gonna come out, cuz it was gonna give me something that was ahead of the curve because you know, you were, you. You were looking at research in a different way, or at least you were kind of conducting your own studies and you had this population of people.

So it was really interesting to see what the results were that you were getting. , and you do have, would you say that you have your finger on the, , on the research pulse at this point?

[00:07:34] **Gez Medinger:** To a degree. , but there is a lot of research happening now, everywhere, all over the place. And there are preprints that pop up and I'm like, oh, I didn't know that was happening.

so, so yeah, I'm generally on top of what's going on at the moment, but yeah, I am still sometimes surprised by stuff that comes outta some studies that I wasn't aware were happening and they suddenly come out and produced some great results. So yeah, the, the landscape's moving pretty quickly at the moment. so it's quite exciting.

[00:08:03] **Evan H. Hirsch, MD:** Yeah, excellent. And, and you do have an academic, rigorous academic background. So you've got a, a master's in engineering from Oxford, right? And then you're also-

[00:08:11] **Gez Medinger:** yeah.

[00:08:12] **Evan H. Hirsch, MD:** Were training as a paramedic or you trained as one.

[00:08:14] **Gez Medinger:** That's right. I was, I was training as a paramedic and I didn't get a chance to complete because yeah long COVID was, yeah, not compatible unfortunately with that.

[00:08:24] **Evan H. Hirsch, MD:** Yeah. So let's, let's talk about, , some of the science and some of, kind of what you've gleaned from some of these studies that you've seen with your patient populations in terms of why people are getting long COVID. What is, what is the current thinking around this?

[00:08:39] **Gez Medinger:** , just to clarify, are we talking about who gets long COVID or are we talking about what's causing it in the people who get it?

[00:08:47] **Evan H. Hirsch, MD:** Ooh, let's do both. Let's let's do let's do who gets it first.

[00:08:51] **Gez Medinger:** Okay. So, , there's what was quite interesting was that the, The initial papers that were coming out early in the pandemic saying these are the people who are struggling with symptoms afterwards, didn't really represent what we were seeing in the patient community, because a lot of those papers were coming out of hospitalized cohorts. and what we were seeing with the patients in the community with long COVID was that they'd often had mild, I use inverted commas for that, you can't see it in the audio, but I'm sort of waving my fingers around not all of these infections felt mild, but a lot of the time I didn't require hospitalization.

[00:09:26] **Evan H. Hirsch, MD:** Mm-hmm

[00:09:26] **Gez Medinger:** , The kinds of presentations that were long COVID presentations that were coming out of that patient community were quite different actually from the people who'd been hospitalized. And, and I think one of the distinctions I like to make between these two are that, you know, the people who are hospitalized with very severe acute infections are often suffering with a degree of organ damage afterwards.

So they may have, you know, scarring in the lungs. They may have, you know, myocarditis, there's all sorts of things that, well, I. Pretty much every organ in the body can get affected by an, a severe COVID infection and even a mild one, actually. , and so the kind of symptoms they were struggling with were, were, were sort of the consequences of that potentially that organ damage rather than the, sort of the, the mechanism or the disease engine, , of what's driving long COVID and-

God, this is so there's so many pieces to this puzzle. , so in terms of who gets it, , moving aside from the hospitalized cohorts, who often tended to be older, poorer health and the rest of it, what we're seeing in the, in the community were people who were. Young early to middle age, often very active. so in my studies, I found that they were 97% of my cohorts were active and two thirds of them were exercising vigorously at least three times a week. So pretty fit on the whole, , they were about, , 70% female, 30% male. So there was this skew towards female, female sex. , there was, and this is where we start to drill in a little bit more. there is a correlation with atopy so that's hay fever, asthma and eczema, where in my, in my populations of, , my surveys. They were represent people with HP were represented by a factor about two and a half times over what you would expect in a general population. , if you look to autoimmune conditions like rheatoid arthritis, that was, , that was about 10 times more prevalence in my, community. and then prior postviral fatigue was about 25 times more likely.

[00:11:30] **Evan H. Hirsch, MD:** Mm-hmm.

[00:11:31] **Gez Medinger:** So there's a few things here that we can look at, whether it's, you know, autoimmunity or whether it's atopy or a predisposition to post viral, you know, symptoms or illness, , that all sort of seem to potentially raise the risk of developing long COVID

so one of the more controversial areas of what might be risk factors for long COVID, , is the subject of prior traa, whether that's physical or emotional or physiological, , and potentially personality type with the type A personality, rather relatively loose sort of definition of what a type a personality is being

people are always on the go essentially. , and how these sorts of people tend to be more likely to develop long COVID. Now we don't have data on this yet. There's, it's a very controversial subject to ME/CFS, but looking at what seems to be happening in long COVID. It does seem to make some kind of sense, because one of the most common, aspects of long COVID is some degree of dysautonomia, which is essentially where your autonomic system is thrown out of whack from how it would normally behave.

And the autonomic system is what governs your heart rate, your blood pressure, your temperature control, your digestion, all of these sort of functions, , your respiration rate, things that you don't normally have to think. And what it seems like happens in long COVID is that the system goes into sympathetic overdrive.

That is to say, we shift away from the rest, digest and heal, to parasympathetic response towards a fight and flight sympathetic response. , and why is this happening? We don't quite know, but it stands to reason for me, and it makes sort of intuitive sense to me that if you've been running your whole life, in a states of sympathetic activation.

I certainly had been, I lived life to the absolute max. I razzed my body as hard as I possibly could. I would work 16 hour days and minus 20 conditions on a film shoot. Then I'd go back to the hotel and run 10 K at race, pace on a treadmill. You know, that's sort of, and, and if I

ever slowed down. I'd feel the need to speed up again. And it certainly sounds like this sort of behavior was very common. So it stands to reason if your a system has been under a huge amount of physiological stress for a long time, , and a virus comes along, then it's gets knocked over that edge into dysfunction more easily.

That's the way I'm looking at it. , I think it's a very interesting subject. I would love to see some more clinical research on this, , so that we can start to see whether. The nbers do back up what we anecdotally seem to see. , I understand why some people don't want to look at it in this way, especially for ME/CFS, but for me, it's an interesting area that deserves future research. so that's sort of a little idea of who might get long COVID. What's causing long COVID I mean,

[00:14:14] **Evan H. Hirsch, MD:** well let's yeah, let's go into that in a second. So yeah. So yeah, I think it's really important to talk about. I mean, that was part of my story when I had chronic fatigue, is that, you know, I was type A, I was, you know, I had just gone through residency, like push, push, push, go, go, go.

You know, and a lot of this is, is embedded in the culture. You know, we're only here for a short time on this earth. Gotta get everything done. Right. And unfortunately, when you get a virus, when you get an infection, all of a sudden, if you push it and that's some of the research too, is that people who, you know, they would pause for a bit when they got sick, but then they would go back to exercising vigorously too soon.

And then all of a sudden that would push them into long COVID as well. And so, it is that sort of, and then the, and then the traa piece is huge, you know, where it's hijacking the immune system and it's causing dysfunction in the hormones and stuff like that. So we see that whether it's long COVID or whether it's one of these other causes, that it is kind of like a buildup of all the toxins that you've been exposed to throughout your life, including negative emotional patterns.

And then the COVID in this case is like the straw that breaks the camels back. Is that kind of some of, your understanding or does that make sense?

[00:15:21] **Gez Medinger:** That's exactly how I look at it. Yeah, exactly.

[00:15:25] **Evan H. Hirsch, MD:** Okay, thank you. So, so yeah, let's talk about now, like what are some of the causes that would lead up to, , somebody getting long COVID besides the actual infection?

[00:15:36] **Gez Medinger:** Ooh. Could you just clarify that question? I mean, so do you mean like, what else might they, what are the other things they might have been doing that it would increase their chance of getting long COVID?

[00:15:47] **Evan H. Hirsch, MD:** Yes.

[00:15:49] **Gez Medinger:** , so. so I've done a little bit of research on this too. And there seems to be a period after the acute infection where people tend to get better for a bit.

So this is week 2, 3, 4, somewhere in there. They start to feel a lot better. Maybe they think they're back to normal. And like you said, they go back and they go back too soon. And something there triggers the body response to go, to become abnormal. , What, what exactly this is triggering? Is it triggering this autonomic?

Is it triggering autoimmunity? Is it an immune reaction that enables some viral reservoir to basically start popping, you know, to basically run unchecked? We don't know exactly what this is yet, but I did a study where I looked at, , people who had either an asymptomatic, initial infection or a very mild initial infection.

They hadn't realized it was COVID initially. And whether these people and these were all people who had then developed on COVID

, So how many of these people thought they could identify a particular trigger that, that basically created the onset of these long COVID symptoms. And in two thirds of the time, people said, yes, they could identify a trigger.

And in the vast majority of those cases, it was stress or exercise. Mostly exercise, but also sometimes stress. So even emotional stress as well, like, you know, moving house or, you know, being fired or a relationship breakup, this sort of stuff was also having an impact on the body physiologically that would tip it over the edge.

And then suddenly, boom, you know, within 1, 2, 3 days suddenly they're feeling awful and they don't get any better. , So, so what you do in the aftermath for COVID infection seems to be important, what you are doing in the run up to that COVID infection may also be important. How much physiological stress are you under at the point in time when you get that COVID infection for me, I was in the middle of maximum on my marathon training block.

So the, you know, the night before I got symptoms, I ran a 17 kilometer at race pace, you know? So, , you know, my body couldn't have been under much more physiological stress, you know, I was running 1,900 kilometer weeks. It's , so. And there was a lot going on in my life. I was jet lagged. I'd literally three days earlier, just flow back from LA.

I've been dashing around, over there trying to get my film career off. So everything was fully go, you know, and all of that, I think contributed to the way my body reacted to that COVID infection.

[00:18:19] **Evan H. Hirsch, MD:** Mm-hmm

[00:18:20] **Gez Medinger:** so obviously you don't know when you're gonna catch COVID but once you have radical rest would seem to be the safest sort of course of action.

[00:18:30] **Evan H. Hirsch, MD:** Radical rest, yeah. Good. Good. Good thoughts.

[00:18:33] **Gez Medinger:** Yeah.

[00:18:33] **Evan H. Hirsch, MD:** , let's talk about the live active virus theory. It's, it's something, you know, this idea that people who have long COVID still have live active virus. This is something that we've seen in, in our practice, where when we start using antivirals and whatnot, we do notice that people get better or they get die off.

They start killing the infection. They may get a little bit worse before they get better. What are your thoughts? What's the research that you've seen on this theory about that? It's actually, the virus is persistent.

[00:19:04] **Gez Medinger:** So we currently have just for context, , sort of re received wisdom at the moment suggests there are seven possible causes of long COVID.

Now I suspect that we're probably gonna find that actually a nber of these are implicated more than necessarily just one. Although it might be a, you know, a tree with one of them at the top, which could be viral, viral persistence. Let me just run through those seven for context. So we have, direct tissue damage.

So organ damage as a result of the virus, autoimmunity. Immune dysregulation, disruption of the microbiome, reactivated latent viruses, like EBB for example, , viral debris, and then finally viral persistence. , so when it comes to viral persistence, we've got, so if you think of it like a game of Cluedo, we've kind of got all of these clues, but you know, it's all kind of pointing towards Colonel Mustard in the billiard room.

but we don't have the smoking gun just yet, you know, so we've got things like, viral DNA being shed, , for X number of months, in a certain proportion of, you know, stool samples we've got, we've got viral RNA being detected in gut biopsies. We've got subjects. we've got, , recent papers, like Akiko Iwasaki and David Putrino's. one, finding T-cell exhaustion, you know, and T-cell exhaustion, , is, sort of a bit of circumstantial evidence suggesting that, well, why are they exhausted? Because we've still got persistent virus, you know? So there's all of these things kicking around, which all seem to suggest that, and that's just three of dozens of bits of circumstantial evidence, which all seem to suggest that there may be persistent virus in the body, but right now we don't know where it is exactly. It could be in a number of different places. I mean, the obvious places to start looking would be the guts, the lungs, , things like the appendix. , and then there may also be, , immune privilege sites as well.

We just don't know if they're like in the eyeball or the testes, you know, and until we start or even, you know, potentially even in, , cerebrospinal fluid, you know. So until we have, I mean, the, the way to do it, unfortunately, this isn't gonna pass any ethics and it's never gonna happen because you can't do it.

But if you suddenly had 20 long haulers die and you could just do full autopsy workups, the problem is is that these biopsies, you need to actually find the smoking gun you can't do on live patients. , so it's very, very difficult. We're only looking at what we've got in hamsters or what we've got in hospitalized

people who subsequently die and then have autopsies or what we might get from stool samples and things like that from living patients. So it's, it's really, really difficult, but we're starting to get increasing amounts of evidence that points towards the fact that there is some remaining virus in the body somewhere, but we don't know exactly where it is yet.

[00:21:58] **Evan H. Hirsch, MD:** Mm-hmm. Yeah, and that would explain a lot of those other studies and, you know, triggering this aspect of the immune system causing hormonal dysfunction or whatever. Yeah.

[00:22:08] **Gez Medinger:** Yeah, absolutely. It would explain. If, if there were to be viral persistence, everything would fall into place.

[00:22:14] **Evan H. Hirsch, MD:** Mm-hmm, yeah. So then let's talk about current thinking around treatments.

[00:22:20] **Gez Medinger:** Mm-hmm

[00:22:20] **Evan H. Hirsch, MD:** , what are people, I mean, I'm practicing functional medicine. I'm kind of doing stuff over here and experimenting with the folks that I'm working with, but what is, what is the data say? What have you gleaned from some of the, the data from the patient groups?

[00:22:34] **Gez Medinger:** So there's a wide range of different kinds of treatments.

So if we start off with the ones that your doctor might give you. Then we can start off with something relatively simple, like antihistamines. So H1 and H2 antihistamines, , do seem to be helpful for a large nber of people. And there is some evidence to back this up. We've got a couple of small trials which have been published, showing that they are effective with people with long COVID, , for people who have POTS or so postural orthostatic tachycardia syndrome, which is a form of dysautonomia, then there is a medication that can.

A huge amount with that. So things like, you know, beta blockers, Ivabradine, midodrine, things like that. Your docs can prescribe that can make a big difference. , you may also find that if your symptoms flare, and so for me, I had a horrific skin inflammation at one point to my long COVID and I was given some, steroids, corticosteroids.

And again, that helps significantly bring that flare down. There's an argent for trialing low dose steroids in long COVID. , I'd like to see that trial, but they all need to be done properly. There's also questions around, you know, long term use of steroids, even at a low dose too. So, you know, not, not ideal.

, then we've also got all sorts of things that might be prescribed for symptomatic relief for whatever your symptom cost elation is because there will be various different things for headaches or for, you know, Itching parit or anything like that, that can help you. , so your doctor can help you with this stuff.

There may not be a magic pill for long COVID, but you may find your doctor can significantly help you. , you've also got things like conservative measures that your doctor might prescribe. So this would include things like, , increase your fluid intake. , if you're dysautonomic and especially if you're pots that can help a lot increase your salt intake.

, again, that can help a lot. If your blood pressure's all over the place and you've, you know, your heart rate's rocking when you stand up, , If your doctor is. So there are some doctors who are also going a little bit further than this. So we've got someone who you, your American audience are probably familiar with called Dr. Bruce Patterson.

So he does a workup on your blood, and looks at which of your cytokines elevated, which are inflammatory markers of the immune system. , and then one of the drugs that he often prescribed is Maraviroc. , and there's, it usually prescribes a statin like pravastatin as well. , some doctors will prescribe LDN, which is low dose naltrexone.

, so this is a drug that would normally be done for, opiates and opiate addiction. , but it does have a surpri-, well, it seems like there's a proportion of long haulers who respond very well to it, to low dose in terms of terms of it calming, calming everything down, essentially. , and then another thing as well, if you have a very sympathetic prescriber, they might put you on anticoagulation.

, particularly if you've had blood slides done up that shows some form of clotting, but again, this whole subject to micro clotting is a huge thing that the patients are very excited about, but amongst the medical community, There has yet to be widespread consensus on what's going on on this sort of micro clotting side of things, or indeed thrombotic stuff generally in long COVID

[00:25:45] **Evan H. Hirsch, MD:** mm-hmm

[00:25:46] **Gez Medinger:** but anticoagulation does seem to help a nber of

patients too. , beyond that, it's a long answer, but there's a lot, right? Cause everybody has tried everything. , you've got the invasive therapies, so things like apheresis. , so this is happening in Germany, , either plasma apheresis or help apheresis. , people are also having NAD infusions. So N A D is one of the precursors of ATP, which is our body's sort of fundamental units of energy.

So people are having infusions of N A D , monoclonal antibodies as well. , some people are reporting positive results from those. , and then you've got a whole world of holistic stuff. So everything from, , cold water, swimming to acupuncture, to intermittent, fasting, to lymphatic massage. . You know and onwards Reiki and homeopathy.

It's a, it's a, it's a huge subject when it comes to treatments. And in terms of what have we got data for? Well, not a lot right now. , antihistamine is something we do have data for. I have a little bit of data too, for a survey I did last year and I looked at how long haulers responded to, , three different interventions that they had changed in the last month.

So they'd either started taking supplements or they'd started taking, , niacin vitamin B3, or they started taking, well started adopting a low or no histamine diet. And sometimes some of those groups coincide as, so some of the people were taking niacin as well as starting low histamine diets. , what came out of this was that the low histamine diet was, by far and away,

the most effective of these things. Supplements were no different from the control group. So, like we would sort of expect it's a bit of a lottery with supplements, unless you managed to plug in existing deficiency that you didn't know you had.

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[00:27:36] **Evan H. Hirsch, MD:** Mm-hmm.

[00:27:36] **Gez Medinger:** , but the low histamine diet made a huge difference and this would work for the same reasons, the antihistamines work, which would be calming down this mass cell reaction.

That is one of the things that seems to be going on long COVID. Why would niacin help? Well, again, this ties back into the metabolic side of things. , so nicotinic acid, which is what niacin is, is one of the central precursors to make ND plus, which is how we generate ATP, which is energy mm-hmm. So there's a, a pretty strong theory, I think, , that was published about a year ago now from some South African doctors, , suggesting that some of the metabolic pathways that would normally happen, you know, normally work in our body have been hijacked and we end up using the wrong metabolic pathways and that has all sorts of consequences, , on us.

And we can start to compensate for some of that by supplementing, with certain things and the most importance of those is nicotinic acid. So yes, that the nit, sorry, nicotinic acid. I looked at sort of P values for statistical significance for both the low histamine diets and niacin. , and they were both statistically significance with nor point north.

I have to some memory it's about nor point nor one, I think for the nice, a nor point, nor nor one for the low histamine diet. So well below that 0.05 threshold. So very long answer. I tried to cover the whole enormous topic of long COVID treatment there.

[00:29:04] **Evan H. Hirsch, MD:** You did great.

[00:29:05] **Gez Medinger:** Thanks.

[00:29:05] **Evan H. Hirsch, MD:** You know, the, the challenges that I have, and I think that a lot of patients have with the treatments that are available right now, is that essentially their bandaids, you know, if the immune system is dysfunctional because of virus and leftover virus and immune dysfunctional or whatever it is, right.

You're, you're taking these. These either their supplements or their medications or whatever, and they can mitigate symptoms and they can potentially allow you to get back to somewhat of a normal life. But the challenge is, is that it's not causing resolution, right?

[00:29:35] **Gez Medinger:** So it's like, whackamole all of these treatments are whackamole and you're not fundamentally taking the batteries out of the game.

That's the problem.

[00:29:45] **Evan H. Hirsch, MD:** And the, and the, the treatments that I would say haven't been addressed or aren't being talked about in the mainstream media, that a lot of me and my functional medicine colleagues are talking about is going, you know, directly after the virus, or is also looking at what are some of the other toxins that are present.

You know, oftentimes we're seeing people who have mold. people who've had another virus, like you were talking about when you had glandular fever, you know, one of the studies, as you're aware of 73% of people who have long COVID in one study also had Epstein-Barr virus, right? Yeah. So what, what else is going on that's causing the immune system to be, to be dysfunctional so that it actually can't take care of long COVID, right?

What, what is, what is actually happening there? So I would just kind of throw that in for people. Yeah. , to think about, does that make sense? Would that be a potential theory?

[00:30:31] **Gez Medinger:** Hugely and mold is a massive one too. So what we're often finding, is there any sort of slight intolerance or slight allergy or slight issue that you had before is just suddenly multiplied a hundred times by COVID.

So you may have been a little bit reactive to mold before, but it's never been a big problem, but now that tiny bit of mold in your house is destroying you.

[00:30:53] **Evan H. Hirsch, MD:** Right.

[00:30:53] **Gez Medinger:** You know, and it's not, and, and you wouldn't have connected the two because like, well, I've always been here before. So I haven't moved. So what's changed?

Well, what's changed is long COVID and now suddenly everything that wasn't a problem before is a problem.

[00:31:05] **Evan H. Hirsch, MD:** Yeah. And we're even seeing people who lived in mold before and now they're in a current home where they don't have mold exposure, but then all of a sudden, now they've got a mold problem.

[00:31:15] **Gez Medinger:** yeah,

[00:31:16] **Evan H. Hirsch, MD:** yeah.

[00:31:16] **Gez Medinger:** Yeah.

[00:31:17] **Evan H. Hirsch, MD:** So let's talk about recovery then. Obviously, you know, like, , a lot of people are struggling out there and we wanna, we wanna give 'em hope, but what's the reality of the situation, right now?

[00:31:27] **Gez Medinger:** So we've got some data that suggests that it's not very encouraging data. , that suggests that of the people who are still suffering two months after a COVID infection, 85% of them will still be suffering with symptoms after a year.

So that suggests, you know, there's only a 15% chance of you recovering within a year if you're still at two months and. Broadly bears out what we've sort of seen in the communities. It seems like there is a faster rate of recovery across that first six months generally. So there's a bunch of people who, you know, are bad for three months and then months 4, 5, 6 are better.

And then they're okay. They're back. But of the people who were I at one year, the majority are still ill ill at two, and still ill as we're at two and a half now. , but what I would say to counter that, is that people are recovering at every stage. So it's not like I know people who, who were suffering for two years and then came out of it.

You know, whatever's changed in their life, whatever they've managed to do. , maybe it's just, their body has finally resolved itself. , but yes, people are recovering at every single stage, but it's a trickle, not a flood. I think realistically, what I would also say is that anecdotally, what I'm hearing from various clinicians is the people who got long COVID from the very first wave are the ones they're having the most difficulty with.

[00:32:55] **Evan H. Hirsch, MD:** Mm-hmm

[00:32:55] **Gez Medinger:** , the people who've had long COVID from subsequent waves, particularly Omicron. It seems to be a little bit less bad, and it seems to resolve a little bit more easily than whatever that wild type did to us.

in the first place. , so there is some good news there. The other side of this too, is that Omicron is seemingly about half as likely to give you long COVID. As the earlier strains were. So that's sort of good news too. but again, it becomes. That doesn't mean that catching Omicron good because it's a little bit like playing Russian roulette with every, every infection you get, because you might not get long COVID on infections.

One, two, and three, but infection nber four. Well, that one might do it. And we're seeing a lot of this now, people who are joining the long COVID support groups who have recovered absolutely fine from their first few infections, but suddenly from their fourth infection bp, that's it.

[00:33:46] **Evan H. Hirsch, MD:** Mm-hmm

[00:33:47] **Gez Medinger:** yeah. Minimizing your exposure risk, I would say is key, even if you previously recovered okay.

[00:33:53] **Evan H. Hirsch, MD:** So then what are your thoughts about minimizing risks? So, , supplements, are there any research on any of the supplements? Vitamin D, vitamin C, zinc, anything like that? And what about masking?

[00:34:06] **Gez Medinger:** So I would prefer masking to supplements.

If you gave, if you were gonna send me in some room that had like some unnamed COVID positive person in it, I'd rather you wearing a mask than having taken some supplements. Doesn't mean you shouldn't take them, always want your immune system to be as well supported as it possibly can be. , but I, I'd kind of I'm down with a physical barrier if I possibly can.

Having said all of that. , even with an FFP three mask, even with an excellent mask, it's not complete a hundred percent protection, , but it's better than not wearing a mask. , ventilation is also very important and makes a huge difference. , indoor spaces are indoor unventilated spaces. Which are crowded, are best avoided, but if you have to be in them, then wear a mask, wear a good one. and yeah, I, I, so for example, here's an example of where I'm at in terms of that calculation of risk. , so I've got a, a university reunion, , that comes up on this Saturday and it's 170 people. They're all gonna go back and normally, wonderful, what a great night out. You know what we call a piss up in the UK.

You know, everybody goes, you know, drinks at four masters drinks and then down to the bar, more drinks, drinks all the way through dinner, then down to the bar, more drinks again. Fantastic. But this is, it fits all the criteria of a super spreader events. Everybody is gonna be my sort of age. So probably got kids in primary school.

Kids have all just gone back to school. We're just seeing the rates starting to accelerate now with schools being back and the extra mixing. Out of 170 people. It's statistically likely that between two and three of them will have COVID. You know, how, how much do I really wanna roll the dice on an event like that?

You know, do I do I think, well, maybe I just won't go down to the underground bar. Maybe I'll just wear a mask until I'm eating and I'll take it off and then I'll wear it again in the semi-social environments, but no one else be wearing a mask. So this is the sort of thing where I'm really carefully thinking, actually, I just don't want COVID again, is it worth the risk?

[00:36:07] **Evan H. Hirsch, MD:** Right.

[00:36:08] **Gez Medinger:** You know, and I managed, I tried to manage our risk. You have to live as best you can, according to suffering from long COVID. That's my other concern. Am I actually gonna, I can't drink whilst I'm there, cause I can't drink anymore. And and even socializing is hard. I'd have to go and lie down every hour.

So that's a bit of a , you know, I can't sort of get into the flow of it. So yeah, I look at events like that and think maybe it's not worth it. So I, and everybody has to make those decisions for themselves personally, you know, according to what's important to you and you know, But, you know, COVID is not going anywhere.

I don't think that we're in the next two or three years. We're gonna be seeing a scenario where we're not just looking at repeat waves going around every few weeks. I think that's just how it's gonna be. And unless we're careful, we're looking at two infections a year, just generally across the population.

So yeah, , there's, there's no like, sort of, again, magic bullet for this either unfortunately.

[00:37:04] **Evan H. Hirsch, MD:** So let's talk about support, what support is available for folks out there. I know you got your finger on the pulse when it comes to some of these group supports.

[00:37:12] **Gez Medinger:** , so the primary, well, the very first things for very first places that were offering support were the body politic group on slack.

That's still now very strong, , very well run. , we've also got literally dozens of long COVID support groups on Facebook, which are also, , extremely helpful. It kind of depends a little bit on the kind of support you want. I mean, so do you want to be able to moan? Cause we all need to let it out somehow, right?

if so then there are certain kinds of groups that are gonna be better than others for different kinds of support. If it, if it's the kind of support it's like, Hey, I really wanna find a paper, that looks into this bit of research. then you may find that Twitter, for example, is, is a good place to be.

And there's a few, , I think the trick is finding the right people to follow, but if you can follow the right 20 or 30 people on Twitter, you'll find that's a very good community, in terms of sort of community support that is very, very responsive as well. And that's the one I use the most now. , although I am a member of about 10 different Facebook, long COVID support groups as well.

If you just type in long COVID group on, on Facebook, you'll have like load and they'll tell you how many members there are. And there will be split up by geographical region as well. So you can choose the one that's more local to you.

[00:38:29] **Evan H. Hirsch, MD:** And Twitter is where you spend most of your time right?

[00:38:32] **Gez Medinger:** I try not to but, in terms of social media, yes.

[00:38:38] **Evan H. Hirsch, MD:** Yes.

Yeah. Hopefully not all of your time, right? Yeah. Yeah. And so, and what's your handle?

[00:38:44] **Gez Medinger:** @gezmedinger. So spelling my name G E Z. Well, G E Z for you, for you guys. M E D I N G E R. ,

[00:38:52] **Evan H. Hirsch, MD:** Okay, excellent. So tell us before we adjourn here, tell us about the long COVID handbook that's coming out in a month.

[00:38:59] **Gez Medinger:** Mm. So this is quite exciting.

So one of the issues, I think that faces somebody who's developing long COVID now, or has developed it recently and they're suddenly hit with this. What the hell is this? What's going wrong with me? What can I take? What can I do? What shouldn't I do? How do I get help from my doctor? You know, You'll, you will have all of these questions and you can put them into Google and see what the internet throws back at you, but you will get a whole world of conflicting advice.

And it seems that there was a real need to have a singular resource that brought together everything that we had learnt in the last two and a half years about long COVID into one place. So this combines. Everything that we've learned from the published science, whether that's, you know, in nature and cell and Jamma, or whether it's my patient led research, which look comes to it from a different kind of angle.

, and we've also got the perspective. So I write it, I co-write it with the professor Danny Altmann, who's a professor of immunology, it's Imperial college, London. , and between us, we sort of cover the, the clinical and academic side. And then from my side, the, you know, the patient led side, , to sort of try and cover every aspect of the condition from the hard science about what we think might be causing it to how you deal with your mental health when you're suffering with long COVID

[00:40:16] **Evan H. Hirsch, MD:** mm-hmm

[00:40:17] **Gez Medinger:** and how you deal with your relationships and, and what the emotional journey is like when you, when you are suffering with long COVID, because that first 12 months is gonna be a roller coaster with more downs than up, , in terms of the way that it affects every part of your life in a way that people just don't really understand.

And this is one of the hardest things is how to, how do you get people around you to understand? Because unless you've experienced a condition like this, it's very difficult. So I broke my pelvis, , about 18 months ago and people immediately understood it was a motorbike accident, you know, 17 miles an hour broken pelvis.

Oh my God, are you okay? What can we do? It's a week in hospital. You know, it must be so awful. I'm like, yeah, it's pretty bad. But long COVID is 10 times worse. you know, I'd break my pelvis every six weeks on repeat, rather than have long COVID continually

[00:41:07] **Evan H. Hirsch, MD:** mm-hmm

[00:41:07] **Gez Medinger:** because breaking my pelvis doesn't stop me drinking coffee or drinking tea.

It doesn't mean that I can only eat like three foods. It doesn't stop me having a conversation with someone for more than three minutes, cause my brain goes to hell it doesn't stop me writing an email or being able to read or being able to watch TV, all of this stuff with long COVID, poof out the window.

Every one of your faculties is affected.

[00:41:27] **Evan H. Hirsch, MD:** Mm-hmm.

[00:41:29] **Gez Medinger:** Unless people have had a condition like this. It's very difficult, you know, knowing what it's like. So one of the things the book also does is help you to help the people around you understand, to give you the support you need. , and that's why also the patient perspective in a book about long COVID is so important because, you know, as, as essential as the clinicians and the academics are in terms of pushing the boundaries forwards research, when it's done properly takes time.

And in the meantime, You kind of need to have that sort of patient perspective of people who have gone through it to help, you know, how you can get through it too. So, yeah, that's the purpose of the book? , I'm very excited to share it with everyone.

[00:42:10] **Evan H. Hirsch, MD:** Yeah, I'm excited to read it.

[00:42:11] **Gez Medinger:** Yeah.

[00:42:11] **Evan H. Hirsch, MD:** I think that what you were talking about with like the mental health component is so incredibly important, you know, when we have people go through our programs, you know, we've got a, a mindset practice.

So what do you do personally, in order to be able to, , to deal with some of the, mental, emotional stuff of this.

[00:42:28] **Gez Medinger:** So one of the things I found is that in the same way that your autonomic system is like smashed, like I've been sort of sending it into the red the whole time before COVID, then COVID came along and suddenly it just it's like the whole engine basically just breaks. Right?

And suddenly the cogs are all just grinding and everything's a mess and it's sort of, you know, you've over revved in it's exploded. Well, the same, thing's kind of true for your emotional state as well. A lot of people say the same thing, and certainly my experience is that you are just all over the place emotionally.

You're you are tipped over the edge into sort of that sort of emotional distress by things that wouldn't normally be that distressing

[00:43:09] **Evan H. Hirsch, MD:** mm-hmm

[00:43:10] **Gez Medinger:** you are perpetually sort of look at my sort of emotions as like a pint glass. Right. And normally, you know, sort of, you've only got a little bit in there and you can see, you can fill that pint up with like quite a pint glass up with quite a lot of stuff before it overflows and,

and you get overwhelmed, but actually when you're suffering with long COVID, it's like it's perpetually about to overflow and it doesn't take much. So trying to actually just manage your emotions in that sense when you're like, that is really difficult. And for me, I find letting that emotion out to be absolutely key.

So, breath work in particular, me guided meditation. I find incredibly helpful for me on a couple of different levels. The first of which is that it's really good for calm down the autonomic system. And the second of which is that often it'll cue basically like 10 minutes of crying. And I'll just cry for 10 minutes and I'll just sob and this emotional just pour out of me.

And a lot of it is grief and loss and frustration and anger and pain from not just prior traa in the rest of my life, but also my health and the life I no longer have, right? You kind of have to grieve that. , and if you don't, then you're just bottled up the whole time. So actually finding some way of releasing all of that emotion is hugely important.

And ev- after every time I've had one of those 10 minute SOS, it's horrible whilst you're doing it. It feels like you know, vomiting when you're sick or something. Its horrible, but you feel better afterwards. It's cathartic and it's,

[00:44:27] **Evan H. Hirsch, MD:** mm-hmm.

[00:44:28] **Gez Medinger:** that's certainly been my experience and the experience of other people I know with long COVID who have found whatever is right for them to be able to find that degree of emotional release.

, And that's been my best way of managing my mental health, because if I don't do that, I just get worse and worse, you know, and, and, you know, I suffered with depression before and, oh my God does long COVID like, make that hard to deal with, you know. It turbo charges, any depression you might have had kicking around the system.

So you kind of really need to be on top of that and watch whatever way you can, because. This sort of connection between mind and body. If you know, I'm sure you will understand this too practicing functional medicine. It is real, , and if you are in emotional distress to that level, it will not be doing your health any good, and it won't be doing your autonomic system any good either.

So it is something that you have to deal with as part of looking after yourself, physically, too, for long COVID.

[00:45:22] **Evan H. Hirsch, MD:** Thank you so much for the beautiful vulnerability and sharing that with us. So before I let you go, can you tell us a little bit more about the breath work that you do?

[00:45:31] **Gez Medinger:** Yeah. So there are, there's a few different kinds of,

sort of forms of breath work, but essentially they're all the same thing, which is slowing your breathing down. , and with a particular emphasis on the out breath. , so all of these different patterns, whether it's coherence breathing or, 4, 7, 8 breathing. , they all involve basically breathing in through the nose and then out through the mouth with coherence breathing, it's normally in for five through the nose, out for five through the mouth, and then just repeats, , 4, 7, 8 is in for four hold for seven out for eight.

, and the idea with all of these is that it basically just. Well, it, it has a physiological response. It changes your body's, you know, carbon dioxide and acid balance and all of this stuff. It's, it's a very physical process and it helps stimulate the parasympathetic nervous system as well. , which is kind of what we need to try and get back to in long COVID.

So personally for me, I try and do coherence breathing. So in for five, out for five, and just try and sit there and try and clear my mind if possible it's hard because it's very busy in there, but try and sort of set a time of five minutes, and do that. There's actually an app free app called breathing app, , that you can download that on the app store and it basically just gives you a noise for inhale and noise for exhale.

And that just helps you focus a little bit. It stops you getting distracted. , so yeah, that's generally what I do. And breathwork generally is one of the most effective interventions that you can do if you are suffering from any dysautonomia as part of your long COVID. And if you got long COVID, you probably are suffering from dysautonomia, even if you hadn't realized it

[00:47:06] **Evan H. Hirsch, MD:** excellent.

Well, so, you know, that leads me to my last question, which is, you know, where can, , where can people find you? And we've talked a little bit about your YouTube channel. Would you send them there or, or what do you think?

[00:47:17] **Gez Medinger:** so yeah, the YouTube channel is a great place to start. , the, the actual, the name of the YouTube channel, I've changed my name now Gez Medinger, but if you want to just go direct to it, then it's just youtube.com/rundmc1. that's just a, sort of a vestigial remaining elements of my old name when the channel was gonna be called run DMC about running and DeLorean motorcars. but in the end, that was no longer appropriate, when all I was doing was talking about long COVID but that's still the URL, if you wanna go straight there and you can find me on Twitter @gezmedinger.

[00:47:50] **Evan H. Hirsch, MD:** Gez, Thanks so much for joining me today.

[00:47:53] **Gez Medinger:** Thank you so much for your time. Thank you, Evan.

[00:47:56] **Evan H. Hirsch, MD:** I hope you learned something on today's podcast. If you did, please share it with your friends and family and leave us a five star review on iTunes. It's really helpful for getting this information out to more people who desperately need it, sharing all the experts I know and love. And the powerful tips I have is one of my absolute favorite things to do.

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