

[00:02:42] And from these symptoms we noticed that many patients having long-lasting symptoms more than the initial two weeks of recovery. And that's when we started this initiative to evaluate and treat patients who have long-lasting symptoms to the Covid-19.

[00:02:59] **Stephen:** Approximately what percentage of people who contract Covid develop long Covid symptoms, and what are the most important risk factors, would you say?

[00:03:10] **Dr. Chen:** So approximately, depending on the cohort that you look at in the research, it's anywhere from a conservative 5% to anywhere from, like, 20 to 30% of patients who had Covid-19. And I think the most important risk factor, of course, is age. Older patients tend to have higher risk, as well as patients with other comorbid conditions. So you're looking at patients who have a history of preexisting diabetes, high blood pressure, things like that, that can lead you to have a higher risk of having long Covid.

[00:03:44] **Stephen:** At what point do you determine that the person's recovery process is over and that they're instead suffering from long Covid?

[00:03:52] **Dr. Chen:** The cutoff that we use is six weeks, meaning, from the onset of infection until six weeks later, if they're having symptoms or improving and getting better, then we can say that this is likely just recovery of the Covid illness or the infection from Covid-19. After six weeks, though, we start looking at these persistent symptoms and there is a gray area where recovery still can happen. And you can see that in many of the research studies, that recovery can happen all the way up to six months.

[00:04:23] But the trajectory of recovery, it's actually much less after the four-to six-week time. So we wanna start looking at these patients to see their trajectory of recovery, meaning how fast are they getting better, are they actually making progress? And if not, start working with our doctors, who evaluate the patients and see what's still affecting them, and then starting to get them treatment.

[00:04:48] **Stephen:** How does the number differ, if at all, across lines of race, class, and geography when it comes to people who've been found to be suffering from long Covid?

[00:04:59] **Dr. Chen:** We do have some specific numbers in regards to race and class because unfortunately, depending on the class, meaning your poverty

level, your risk of getting Covid-19 is higher at the lower socioeconomic class. And due to that, the rates of long Covid is higher there.

[00:05:19] In addition to that, you look at geographic areas where there's higher concentration of people. Of course, the risk of Covid-19 is higher there. And of course, the risk of long Covid is also there, as well. We do notice that in regards to race, there is a small increase in the number of, I think, Caucasian patients with long Covid.

[00:05:40] But that may just be due to the distribution of our center. When you look at bigger studies around the country, there's no-- and you account for differences and other factors, that there's not that much of a difference in regards to race.

[00:05:55] **Stephen:** What specific effects of Covid would explain the wide range of long Covid symptoms?

[00:06:03] **Dr. Chen:** So unfortunately, Covid-19 is very severe illness-wise in many patients, and due to that alone, it can lead to lingering effects on the inflammatory and-- inflammatory damage that happens when you have the illness. And that alone can explain why there's so many different symptoms because Covid itself affects so many different organs and cell lines within the body.

[00:06:28] And the thing is, the severity of illness also, I think, is important because what that does is, it causes a longer term recovery period as well. And then finally, there's a lot of things I think we don't know yet about Covid-19, how it affects different cells.

[00:06:43] We know that many cells, whether it be cells in the brain, the lungs, the kidneys, and other organs, they exhibit the receptor for Covid-19, and because they exhibit the receptor, the virus can easily enter these cells. So I think, down the line, when we learn more about what actually happens when the virus enters the cells and causes the infection, then we can learn what disruption there is with this virus on our body.

[00:07:13] **Stephen:** Chronic fatigue is often cited as a symptom by those suffering from long Covid. Has there been a definitive link established between chronic fatigue syndrome and long Covid?

[00:07:24] **Dr. Chen:** I don't think there's a definitive link right now. I mean, there's definitely similarities between the illnesses. Chronic fatigue is often

described, you know, as an illness that's persistent after an infection or some sort of change in a person's health. And this is very similar to long Covid in that this fatigue that's persistent in long Covid is due to Covid-19. So there are similarities. I think the difference is that there's a lot of research right now based on Covid, as it is a hot topic, and we're learning a lot about it.

[00:07:57] And I think the problem is, we haven't learned enough. Meaning, there's still more that we can really assess as to what the ultimate effects of the virus is. And once we do that, then we can speak more definitively about whether this is just a similarity or is it, you know, really the same illness that we don't know yet.

[00:08:19] Unfortunately, research does take a long time. It's not an easy thing to admit to, because we want answers and we wish we had answers almost two years ago. But unfortunately, you know, we want to do our due diligence to really understand this illness, not just for this illness, but also for future illnesses that are similar to this.

[00:08:40] **Stephen:** Long Covid has been linked to mental health complications as well as physical. How prevalent have these problems been in the patients you've observed, both yourself and in your research, and to what extent would you say mental health problems are a component of the disease itself as opposed to a consequence of having to deal with its physical effects?

[00:09:03] **Dr. Chen:** I think it's really hard to separate the mental illness as a separate disease or consequence, because if you look at mental illness, it's a component of your health, right? And if there's something that is affecting your health in other ways physically, then it can of course, cause psychological effects.

[00:09:23] And unfortunately it's very hard to tease them separately. And having said that, you know, we do see a large amount of our patients exhibiting signs of depression, anxiety, due to their illness as well as concurrently with their illness.

[00:09:39] And that's why there's such a difficulty in teasing, well, which one is it, right? And when we look at our patient base, it's anywhere from I think 30 to 40% of patients that have a report of these symptoms, that are now getting help from professionals one way or the other.

[00:09:58] **Stephen:** If someone contracts Covid and is unvaccinated, is there evidence to suggest that they're at a greater risk of developing long Covid

conditions compared with people who are vaccinated? Or do we even have enough data on that yet?

[00:10:12] **Dr. Chen:** So, that's interesting because there is some preliminary data. In fact, we have some published data from Mount Sinai that talks about how vaccinated patients may be less prone to getting long Covid. Unfortunately, there's also conflicting data that shows some vaccinated patients have a higher risk of getting long Covid, which is really interesting in that, why is there a difference?

[00:10:35] And it may be that in some select population, when you get vaccinated, what happens is it prevents illness. And because it prevents illness, it prevents the subsequent effects of the illness, which is long Covid. Whereas in other populations, maybe when you get the virus, you can say that your illness was not as severe, but you still got infected with Covid-19.

[00:11:02] And those that get the vaccine who are then getting Covid-19, they were maybe more prone to getting Covid anyway. That vaccination didn't prevent the virus from infecting you. And because you're more prone to getting Covid, maybe you're more prone to getting long Covid. So that's a interesting, I guess, way I'm trying to kind of explain the data, but until we know more, it is just speculation, but it is a very interesting phenomenon.

[00:11:35] **Stephen:** From what you've observed, what are the most common medical similarities among patients who've recovered from long Covid?

[00:11:43] **Dr. Chen:** Well, I think those who have the mildest illness are the ones that have the least amount of symptoms, they're the ones who tend to make a better recovery trajectory. Meaning, if someone and on one hand is short of breath and that is their only complaint, then we can focus on that and treat, and patients do overtime get better.

[00:12:06] But if you compare it with another patient who, let's say, is short of breath, but also very fatigued and has a lot of brain fog and memory problems, as well as some depression or anxiety, then it becomes more difficult because you're now dealing with several systems that are, you know, not going well or having symptoms that are difficult to treat.

[00:12:31] And it's just very hard to really tease out the symptoms and say, well, what is the cause of what or if one symptom is simply due to another symptom? And because it's complexity of these interactions, it makes it harder to treat the patient.

[00:12:46] **Stephen:** Based on the research and your own understanding, what would you say is the typical percentage of recovery and the recovery time?

[00:12:55] **Dr. Chen:** Unfortunately, it's hard to say, you know, percentage of recovery just because, you know, we're still, we're pretty early in the illness and I can imagine that patients over time will get better and better.

[00:13:09] We do try to keep a good track of where our patients are in the timeline of recovery. But the data is a little muddled because unfortunately, some patients will ultimately drop out because they feel like they're not getting better and we don't have follow-up on them. So, this is anecdotal, but I know that some of my patients are reporting that they're fully recovered and doing well. But I can't say that it's a hundred percent of my patients, unfortunately.

[00:13:40] **Stephen:** While the study of long Covid began relatively recently, are there already treatments available?

[00:13:47] **Dr. Chen:** Yeah, I think for several of the most common symptoms, there are things that we are doing to treat the patients that are working. For instance, you know, for the fatigue and the loss of energy, our rehab group actually has recently worked on a multidisciplinary treatment guidelines for these patients. Meaning, what they have experimented on and put in place in the last two years has really helped patients to the point where they feel confident to recommend this type of treatment for long Covid patients with fatigue.

[00:14:25] For pulmonary symptoms, we know that, with good evaluation and proper medications that patients are feeling less short of breath and doing better, and, treatment for depression, anxiety, that that has been going well. So I think, there are definitely areas that we are making progress on and hopefully that together will continue to accumulate and-- culminate, sorry, into what we need for the treatment of the patient as a whole.

[00:14:55] **Stephen:** How has the response from the federal government been in terms of research and treatment?

[00:15:02] **Dr. Chen:** Well, I think there's always room for improvement. We can wish for the world and, you know, we can get a piece of it. I think the federal government has been doing a good job.

[00:15:12] I think number one, they actually recognize now that long Covid is a consequence of Covid-19. I think that's really important, because at first it was very hard to even say that a patient has long Covid. So having the Biden

administration actually recognize it and put resources towards researching and evaluating, I think that's important because it gives us a way to help out patients, and I think that's been very good.

[00:15:45] RECOVER has been started, which is the big NIH grant to study long Covid. And I think that's very important, supported by the government, because what it does is, it gives us a way for our researchers to get the funding needed to do the research. Now, having said that, it's gonna take a long time and I'm not gonna blame the government, even though sometimes the government is slow, but I don't think it's their fault.

[00:16:10] It's just that research does take a long time because you have to find the right patients. You have to design the good studies, you have to get the data. But you know, at least now we have a tool to learn about this illness and to take care of patients with this illness. So I think it's in a good place right now.

[00:16:29] **Stephen:** What is your typical counsel to long Covid patients for whom there seem to be no quick solutions and who may have to resign themselves to months or even years of this illness?

[00:16:41] **Dr. Chen:** Well, when I speak to patients, what I tell them is that, number one, we are working on the solution. That is the ultimate goal. And yes, it does not lend itself to an agile solution, because it takes time for us to study the illness. But there's a lot of resources being put into learning about this.

[00:17:03] And I also tell them that we do have good success with patients who are put on the road to recovery and are getting better. Meaning, their trajectory to recovery is there. They are feeling better day after day, week after week. It's just that the recovery takes so long. So I guess the message is, to have hope, that we know that some of the things that we do are working, and that there will be other things coming down the pipeline, because we are putting resources into understanding it.

[00:17:36] **Stephen:** Finally, what has been most surprising to you in your own research and observance of patients with long Covid?

[00:17:44] **Dr. Chen:** Yeah, I think the most surprising thing is just how broadly it can affect patients. You're looking at patients who are those who you would expect to have Covid and then symptoms that are persistent due to this very severe illness. You know, someone who is more elderly maybe has several existing medical conditions. So these are your kind of typical, oh, like this makes sense that this patient would have problems after a severe infection.

[00:18:15] But the other thing is, you're also looking at these marathoners, these athletes, these young people who are in their twenties and thirties and they are also, previous to Covid, having, are at the peak of their life, but then having Covid-19 actually affected them so dramatically that they're no longer to do, able to do the things they did before Covid. And it's really interesting that this one virus can affect so many different people in the same dramatic way. And that's, it's just very surprising and very, very unexpected.

[00:18:57] **Stephen:** Well, Dr. Chen, that was it for my questions. Was there anything else that you wanted to say, especially to patients who may be suffering from long Covid?

[00:19:05] **Dr. Chen:** Well, first I want to thank you, Stephen, for bringing me on. I think anything that we can do to get the message out there to our patients is really important. And for the patients, I think patience, unfortunately, because we are doing our hardest, we are trying our best. We are trying to find every resource possible to help take care of you, and we can only ask for your patients so that you know over time we'll be able to take care of you better.

[00:19:35] **Stephen:** Well, Dr. Chen, thank you so much for your time and for your work.

[00:19:38] **Dr. Chen:** Of course. Thank you as well.

[00:19:40] Dr. Zijian Chen, MD, is the site director for the division of endocrinology at Mount Sinai Beth Israel, and is part of the team that established the Mount Sinai Center for Post-Covid Care.

[00:19:51] Now, for more of a research focus into long Covid, we turn to Dr. David Putrino, the Director of Rehabilitation Innovation at the Mount Sinai Health System, and a professor in the Department of Rehabilitation and Human Performance at the Icahn School of Medicine at Mount Sinai.

[00:20:08] Dr. Putrino, welcome to the show, sir.

[00:20:10] **Dr. Putrino:** Thank you for having me.

[00:20:12] **Stephen:** I'd like to start by asking you to cover briefly your medical background and how it now relates to long Covid.

[00:20:20] **Dr. Putrino:** Sure. Clinically, I'm a, a physical therapist and my PhD is in neuroscience. So, prior to Covid, a lot of my work was concerned with dealing with disorders of the nervous system.

[00:20:34] Now, that can range from helping people recover from a very overt event that has damaged the nervous system like stroke or spinal cord injury, or multiple sclerosis, all the way through to individuals who have more subtle damage to less well-known parts of the nervous system, like the autonomic nervous system, which is part of the nervous system that deals with how you control all of the things that you usually don't need to think about day-to-day, like how quickly your heart should be beating and how quickly you should be breathing and, and things of that nature.

[00:21:09] So prior to Covid, that was the sort of work that I was doing. When Covid hit New York City in March of 2020, we started to manage the care of folks with acute Covid infection. And we were trying to do a lot of telemedicine to make sure that people stayed in their home as they were sick with acute Covid and only came to the hospital if it was absolutely necessary.

[00:21:30] We managed the care of just over 7,000 people with acute Covid infection, and during that period we started to notice that about 20% of the acute cases that we were managing just didn't quite get better.

[00:21:46] They had lingering symptoms that were persisting. They had extreme fatigue, shortness of breath that was in congress with how their initial acute infection was going, and they were really just not recovering. They kept saying to us, well, we're still unwell. How are you gonna help us?

[00:22:08] That was when we first started to think about long Covid as a condition that needed aggressive treatment. This was around just early May of 2020, so it was very early on that we started to have a few hundred people coming to us and saying, I'm not getting any better, and we initially just started by enacting symptomatic care.

[00:22:30] So we started hearing, okay, you've got extreme fatigue, and exertion is making you feel worse. Well, we're going to introduce you to an energy conservation technique that we call pacing, which should help you with these symptoms that that you're experiencing. Okay?

[00:22:47] You're experiencing rapid heart rate and changes in blood pressure when you go from sitting to standing. We're gonna start you on autonomic rehabilitation protocols. We're gonna try this medication and that medication

based on what your symptoms are. And piece by piece we, we started to get more and more experience in treating these symptoms.

[00:23:08] **Stephen:** Long Covid patients have talked about how they're often not believed in some cases by their doctors, in some cases, even by their friends and loved ones. Could you talk a little bit first about why you, it seems, from the get-go took a different approach with that number one. Number two, the ability of our current testing to identify the causes of long covid and, perhaps number three, what you yourself have specifically done to address that?

[00:23:39] **Dr. Putrino:** Yeah. I would say across my clinical career, it's always been a wonder to me how someone can walk into a clinical practice feeling sick and simply not be believed or not be helped. I honestly can say that in 20 years of practice, I can count on one hand the number of times that someone has been overtly faking their symptoms.

[00:24:01] You know, it's not like there are millions of people out there who are trying to pull one over on a doctor. You go to a doctor because you're feeling unwell and you hope that they're gonna be able to help you. You don't go to the doctor and and pretend to be unwell. No one has time for that. No one wants to do that.

[00:24:18] So, the default assumption that someone is feeling unwell, for the simple reason that the very superficial testing protocol that we first do as a first line is showing up negative, that's just bad doctoring. That's being a bad clinician. That's a, a very, very facile analysis of the situation that's going on.

[00:24:41] So I really feel quite strongly about this idea that the first response that so many people with long Covid get are, you must be faking this. That's intellectually lazy, it borders on malpractice, and we need to do better as a group of clinicians.

[00:24:59] It all stems back to a lack of education about complex chronic illness. And that's something that very much our team is working to improve upon is, how we educate clinicians and how we educate medical students as soon as they enter, you know, their medical training. As we learn more and more about long Covid, I think that one of the things that is important to note is that testing is often abnormal in folks with long Covid.

[00:25:28] You just need to know where to look. So, for instance, I mentioned dysautonomia, which is the dysregulation of the autonomic nervous system. There are simple testing paradigms, called the Nasalene test, or the 10-minute

stand test, where you literally, all you need is a stopwatch and a pulse oximeter, and you can watch somebody's heart rate climb precipitously as you ask them to stand in one spot for 10 minutes.

[00:25:56] This is a simple test. It's objective, and it can show you if someone has dysautonomia. Around 70% of the patients that come through our clinic meet the American Autonomic Society's criteria for dysautonomia using these tests. Seventy percent. So this is a large proportion of folks who are testing abnormally as soon as they enter our clinic, but it's not a mainstream test that is conducted by every primary care practitioner out there in the world.

[00:26:29] The reason why the is because it takes 10 minutes. That's usually how much time that people will assign to spend with someone who comes in with long Covid symptoms. That is a test that is quite routinely positive.

[00:26:44] We also have started to do experimental work on understanding abnormalities that are happening in the blood of people with long Covid. So for instance, there is a great researcher out in South Africa by the name of Resia Pretorius, who has published multiple papers showing us that individuals with long Covid are having vascular abnormalities that lead to microclots forming in their blood, as well as what we call hyperactivated platelets.

[00:27:11] So platelets are showing, uh, -- the platelets, which are, you know, small elements within our blood, are showing abnormalities in their level of activation in the blood. We, too, have replicated Reese's findings where we're starting to see that individuals with long covid are much, much more likely to have these microclots in their blood, as well as hyperactivated platelets, than individuals who do not have long Covid.

[00:27:36] Similarly, working with Akiko Iwasaki, who is a world-renowned immunologist, who works out of Yale University, we've been able to show that individuals with long Covid have hormonal imbalances, low testosterone, low morning cortisol.

[00:27:53] They have immune dysfunction where we see evidence of immune exhaustion and immune hyperactivation, and we also see latent virus reactivation. So, herpes viruses and Epstein-Barr virus is reactivating in the body of people with long Covid very disproportionately compared to individuals with long Covid.

[00:28:16] So much so, that when we took all of the blood findings that we were seeing in in folks with long Covid and we fed them into a machine learning

algorithm, we were able to differentiate with 96% accuracy, who had long Covid and who was a healthy control by focusing in on key blood biomarkers. So using blood alone, we were able to make the determination.

[00:28:40] So, just because we don't currently have a biomarker, just because we don't currently have a be-all and end-all absolute diagnostic criteria for long Covid, it certainly does not mean that it's not real.

[00:28:54] **Stephen:** You've also been finding some success in studying data collected by Fitbits and other wearable fitness devices. What kinds of data are they giving you?

[00:29:04] **Dr. Putrino:** So, yeah, wearable technology is, I think, very valuable for us to understanding how long Covid can affect day-to-day function. One of the, I think, most frustrating elements of long Covid for most of the people who live with it is, long Covid is this relapsing, remitting illness, where some days you can feel almost normal and other days you are unable to get out of bed.

[00:29:30] And understanding what is happening in the physiology of people when they're having a good day versus a highly day, I think is crucial to us understanding how to better manage the care of of folks with long Covid at their worst, and helping them to maintain longer stretches of healthy behavior when they're at their best.

[00:29:56] So, we've been partnering with a number of different organizations as well as collecting data on our own to better understand what physiology looks like during symptom variation. We're starting to see a very interesting relationship between heart rate variability, which is the amount of time variability that we see between each heartbeat.

[00:30:19] So it's not heart rate, it's not how many beats of your heart are happening per minute. It is what is the amount of time between each heartbeat and what's that average over a long period of time? And that gives us a little bit of an, an understanding of your nervous system health. And what we're starting to see is that that is tightly linked to how people's symptoms are going to be day-to-day.

[00:30:44] So when your heart rate variability is low, you're much more likely to be having a bad symptom day. When your heart rate variability is a little bit higher, you are much more likely to be having a better day in terms of symptom burden. So it allows us, it, it's, it's not telling us anything revolutionary about the overall pathobiology, you know, the underlying cause of the illness, but it is

giving us signposts for, Hey, you're gonna have a bad day today, so why don't you take it easy. Or, you know, today's a good day, so maybe you can get a little bit more done, but don't overdo it because, you know, it could be a bad day coming if you push too hard.

[00:31:23] So anything that allows us to use hard data to inform the advice that we give to our patients is very exciting and, and, and we're still learning, but it's encouraging.

[00:31:36] **Stephen:** We're now three years out from when Covid first appeared. Why is so much of this research taking so long?

[00:31:45] **Dr. Putrino:** I would push back and, and say that long Covid is probably one of the the best-researched conditions in the last three years. We have learned an enormous amount related to long Covid, thanks in main part due to the work that is actually being conducted by patient-led organizations and the willingness of people with long Covid to really do anything, and I mean anything, they can to help further the cause, which ranges from signing autopsy, you know, forms for autopsy studies after their death, all the way through to engaging in painful tissue biopsy studies and imaging studies, and giving blood, you know, over and over again so that we can understand things.

[00:32:33] So I would say that our, our understanding of long Covid has, uh, and other infection associated complex chronic illnesses has really grown over the last three years, and it's grown at a rate that we haven't seen in decades of research into other infection associated chronic illnesses such as chronic Lyme Disease or myalgicencephalomyelitis.

[00:32:55] So I'm encouraged at the pace of the research right now, but I would say that what, what is really needed in this moment is, a lot more of an emphasis on trialing out drugs. I think one of the things that has frustrated both us here at Mount Sinai as researchers, as well as the long Covid community, is the fact that a lot of research of, federal research efforts, are being placed on behavioral therapies and exercise based therapies, which have been proven over and over again in the, uh, infection-associated complex chronic illness community to not be effective.

[00:33:37] And what we need are trials that are going to leverage what we're learning from this amazing research that has been conducted over the last three years to actually test drugs that have a chance of really changing the way that we treat complex chronic illnesses, looking at drugs that can break up micro lots

and actually reduce platelet hyperactivation, looking at drugs that can address viral persistence or latent virus reactivation. So, antivirals.

[00:34:07] Looking at drugs that treat mitochondrial dysfunction that we're seeing very significantly occurring in people with long covid and reverse the hormone dysregulation that we're seeing. These are the sorts of clinical trials that that should be being conducted right now, and these are the things that we're really fighting for is rapid pragmatic clinical trials of drugs that address the the biological targets that we're seeing in our research.

[00:34:33] **Stephen:** With studies putting the number of long haulers at between one in eight and one in 10 people who've had covid, why are we not seeing perhaps the same sense of urgency to combat it that we've seen with some other illnesses, including covid itself? What you just said, notwithstanding, um, obviously there has been movement on, on these fronts, but what do you think?

[00:34:57] **Dr. Putrino:** I think that complex chronic illness, I think chronic illness in general, illness that does not kill you, is very easy to ignore. So I think that there is often a tendency for government agencies to say, well, we're gonna put 10 billion into cancer, because cancer is killing people. We're gonna put, you know, money here and money there into acute Covid because we were seeing people dying, actively dying.

[00:35:25] We're kind of conditioned to think that our, the worst possible consequence of illness or the only serious consequence of illness is death. But what I think people miss often is the idea that people with complex chronic illness, they don't necessarily die of the complex chronic illness, but much of their life is taken away.

[00:35:50] And these individuals, you know, the myalgic encephalomyelitis community, they have a hashtag of #MillionsMissing. And that's exactly what happens with complex chronic illness. They go missing. They're still there, they're still alive, but you just don't hear from them anymore. And so it's very easy for government agencies to forget that these people are here.

[00:36:10] They fade into the background and they quickly become forgotten. And in many ways it's convenient for our government to forget them. It's convenient for funding agencies to forget that these people are here because the majority, you know, 90% of the population is getting on just fine. But we we're not going to forget about these people.

[00:36:30] It's crucial that these individuals are met with all of the resources that they deserve to come back into the forefront, come back into their lives, regain what was taken from them by this virus. And I think that it is crucial that we understand that there are consequences to such a large chunk of the population suddenly going missing.

[00:36:54] You know, the CDC estimates that as many as 5% of the adult US population now has long Covid and at least 30% of that 5% have severe effects of long Covid, meaning that they can't work anymore. The Brookings Institute released a damning summary showing that a large proportion of our missing workforce is due to the sequelae of long covid.

[00:37:23] And so when we think about it from an economic standpoint, if we continue to ignore this, the consequences are going to be dire, because the alarm that we set off about the acute Covid pandemic, we've squashed that. We've said, look, the pandemic's no longer a national emergency. We've removed that declaration, but people are still getting long Covid day to day.

[00:37:46] I'm still meeting people in my clinic who got sick, you know, in late 2022, early 23, and now they can't get back to their life. And they thought, Hey, the, it's over. I didn't need to wear masks. I, everyone told me that Covid was gonna be mild and now my life is on pause. So we need to really make sure that we are sounding the alarm here because it is easy to forget. It is, uh, we want to forget. We want to move on, but, It's not realistic for us to do so.

[00:38:19] **Stephen:** Certain literature has talked about how sufferers of long Covid and chronic fatigue syndrome are at greater risk of self-harm with the feelings of helplessness that go along with those illnesses. Is there anything that you say to patients to offer encouragement and hope in the face of something that to a patient may appear to have no end in sight?

[00:38:41] **Dr. Putrino:** That's a great question. I think that the main thing that I offer to patients when they come to see me is, is not that we're going to get them better. I can't promise that. And, and, and it's, it's not responsible, it is not responsible of me to promise that.

[00:38:58] I think the main thing that I try to promise to patients is that I'm there with them. I'm not going to stop. I'm not going to relegate what they're experiencing to something psychological. I'm not going to sort of just stop replying to their requests for appointments and hope that they go elsewhere, that we're going to keep trying things until we find something that works.

[00:39:24] And I think that in terms of providing hope, hope is always a good thing. I think in terms of providing hope, just being able to be familiar with the symptoms that someone is experiencing often means everything to the patients that we're seeing with myalgic encephalomyelitis and long Covid, because they're so used to people saying, "Oh, I've never heard of that, this must all be in your head," that when someone actually says, "Oh yeah, this is quite common, and here's five things that you can try to take the edge off these symptoms," just that alone provides a lot of hope for individuals that maybe they might be getting care that makes a difference to them.

[00:40:10] So, that's where I start. I also make sure that it's really evident to patients who come to see us, that psychological help is available. We make it very, very clear that we do not believe that psychological symptoms are causing any of their symptoms, but it's still important to address them.

[00:40:32] You know, if, if someone is telling me that they're feeling suicidal, or if someone is telling me that they are feeling urges toward self-harm or suicidal ideation, that is, that's an emergency. That is something that needs to be addressed. Sticking our head in the sand and, and saying, "Oh, well, you know, I don't want you to think that, I think that what you're going through is psychological" doesn't make sense in that context.

[00:40:56] We need to address it head-on. We need to make sure that they're getting care for these symptoms because adjusting to the fact that suddenly you are chronically disabled after a life of living in relatively good health is something that we do for everybody regardless of diagnosis.

[00:41:16] People who are diagnosed with cancer, who are going to be chronically disabled for the rest of their life, they receive psychological counseling. We know that that psychological sequelae are not what are causing the cancer, but we provide them with psychological support.

[00:41:33] Someone who's suddenly had a car accident and now has a spinal cord injury, we make sure that they are surrounded by psychological and social support so that they can adjust to their new reality. Again, psychologists aren't going to get them out of their chair and walking with a healthy spinal cord, but it's going to help with the adjustment.

[00:41:53] And we view psychological services through the same framework and we also make sure that we try to provide social support if it's something that individuals with long Covid want. So peer support is very important as well. So we make sure that we can, if requested or if consented to, we connect

individuals with long Covid with one another so that they can have somebody who's been there, somebody who's been through what they've been through.

[00:42:22] We also try to connect caregivers and partners of people with ME and long Covid together, because that is also an adjustment. You know, often partners of people with long Covid and partners of people with ME, this is not how they saw their life either. Waking up one morning and suddenly, they're the primary caregiver for somebody who has a lifelong chronic illness.

[00:42:46] So that has to be navigated with a lot of compassion and understanding as well. Otherwise, these feelings can bottle up and they can cause big, long-term problems.

[00:42:56] **Stephen:** Dr. David Putrino, thank you so much for your time, sir.

[00:42:59] **Dr. Putrino:** Oh, thank you.

[00:43:02] **Stephen:** Thanks again to Doctors David Putrino and Zijian Chen for appearing on today's show. That's all for this episode of Road to Resilience. If you enjoyed it, please rate and review us on Apple Podcasts and tell a friend.

[00:43:13] Tune into our next episode for a discussion on resilience and healing with former airline pilot and Captain Chesley "Sully" Sullenberger, whose emergency landing in the Hudson River became known as the Miracle on the Hudson. This podcast is a production of the Mount Sinai Health System in New York. It's produced by me, Stephen Calabria, and our executive producer Lucia Lee. From all of us here at Mount Sinai, thanks for listening and we'll catch you next time.