Hyperbaric Medicine: Get Rid Of Your Chronic Fatigue Induced By Long Haul Post-COVID Transcript

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Introduction to Hyperbaric Oxygen and Long COVID

It started with her questioning it all. Do you think hyperbaric oxygen should work for this? You know it's a lung problem. You're breathing in 100% oxygen.

There should be a direct effect on the lungs. And that's what people are dying of with Covid. What do you think? Three bears remembering in medicine. Everybody.

For anything that's 25 years or old. is doctor talks. Okay. Well, welcome. Welcome. This is, another, overcoming long Covid and, CFS chronic fatigue. And today we have a really special guest.

I'm very excited because I said I'm always, I love bringing new information, but I'm especially excited when I'm going to learn a lot. And today I have, Juliette and Paul Harch with us, and, Doctor Harch is a, professor of, emergency medicine and hyper hyperbaric medicine at, at the LSU Louisiana State University School of Medicine in New Orleans.

And, the he's the man who has really put hyperbaric oxygen, I think, on the math. I mean, is taking it to new, new, new dimensions. And, and so we're just going to start off, I one of the things that I, that we were just talking about before I hit the record button is how he got involved in hyperbaric medicine, because, it really wasn't a thing.

I don't think too much. So, we're going to start right here, and then we're going to roll into like how how how, it what its uses. And, why we think of it with, long Covid and also just with Covid, it sounds like.

So, Dr Harch. Tell us your story. Well, I'd always wanted to be a surgeon. Was in a surgical residency, and I was involved in a very bad, motor vehicle accident and ended up, having to take a medical leave.

Dr. Harchu2019s Path into Hyperbaric Medicine

Finished two years and needed another operation and took another medical leave. And once out, I wasn't so sure that I could or wanted to continue. And, I ended up finding a job to support myself in emergency medicine and evolved to, accepting, what I thought was a temporary job in New Orleans.

And when I went down there, I joined an emergency medicine group that was also the diving medicine, hyperbaric medicine wound care center for the city and for all diving accidents, South central United States and Gulf of Mexico.

And we had the option of getting involved in diving medicine. Of course, it's not taught in any medical schools. But I would be interested in it. And I thought, okay, yeah, let's go learn about this.

And as soon as I started seeing the patients, I was intrigued by these divers who would come in and, you know, everybody's, familiar with the bends involving joints and, you know, the kind of orthopedic presentation and spinal cord injury.

But so many of these divers were just not right in their head. They were spacy and slow and, you know, a little confused and just off. And I started asking questions about it, you know, what's going on in their head?

It bubbles. There they go. Nobody knows. I go really? Well, what are we treating? No one knows. Well, what do you do? Put them in the chamber. Well, we put them in the chamber and they come out and they're better.

But they had residual neurological problems. I said, well, wait a minute. Did we treat the bubbles? No one knows well how many treatments you take to get rid of the bubbles.

No one knows. And I thought, My God, this is the most primitive area of medicine. It's been 80 years in the making and they can't answer. Some answer, some very simple questions.

And in the midst of it, I started delving into and looking at brain decompression illness. And in particular, the U. S. Navy had published that single treatment.

First treatment was curative. In 90% of cases, we had about 40%, and nobody could answer why. Turns out it was the delay to treatment, and we weren't treating what the Navy was.

So New Orleans is 90 miles upstream from the Gulf of Mexico, and by the time the divers would get in from the Gulf by land, then and maybe try to sleep it off and drift in a day, two days later, whatever we were to treat the same thing the Navy was.

And then in the midst of it, I made a discovery that it maybe was telling us if it's 24 hours or more, forget it. They got what they got there stuck. And I kind of took a flier, if you will, with some of these divers who were significantly delayed and significantly damaged.

And I treated them with a different dose. And lo and behold, these guys improved. And we captured it on brain imaging. When nobody was able to see this on CT or MRI, we could see it on brain blood flow imaging.

And once we were able to prove this unequivocally and it was a clinical finding, I went running to scientific meetings to show this stuff. Nobody wanted to believe it.

And it was resisted with vigor because I was showing this in the signature diagnosis that contradicted, if you will, what the Navy had taught. And so the question then arose, well, wait a minute.

We're treating subacute, maybe chronic brain injury here. What else? Well, we simultaneously were treating a New Orleans boxer 23 years after his last bout, dementia, pugilistic.

And then the first cerebral palsy child. Old stroke, toxic brain injury, residual. And this whole thing. Mushroom. And essentially what we were able to demonstrate is that hyperbaric oxygen is a generic drug for chronic brain injury and even subacute brain injury, almost irrespective of cause.

And that's where we ended up. And then the the latest addition was due to Juliet and, and what she started talking about with Covid. So that's my story if you will, was taking a clinical observation, asking questions that nobody could answer.

That was so basically simple. And then treating some patients that were untreatable and the result was so powerful I couldn't walk away from it. And so what year was this about 1989.

Good. Okay. Well, it just because what I like people to understand is how difficult and how slow changing medicine are. Because I don't think people appreciate it.

They, they, you know, and the work and the dedication to keep going because this is, you know, 33 years now. Okay. And still, hyperbaric therapy is one of the best kept secrets in America, you know, unquestionably. And another little caveat here is that I showed this in divers.

But it was not new. The lower pressure treatment hyperbaric oxygen for chronic neurological condition. My mentor, one of my mentors, Doctor Richard Neubauer, had been doing this for 12 years and just getting all kinds of resistance.

The Russians had done some of this back in the 70s and 80s, other people along the way. But one of the problems

was none of these people had academic positions.

They were in freestanding centers or other places just doing hierarchies, and nobody wanted to believe it. And they were easily discarded by the academic community.

And I thought, oh, we got it. We got to have an academic position. And my senior partner ended up and with I helped. We started a fellowship at LSU and we tried to do the academic track to this, but even with that, it just tried to turn around a hundred year old boat that, the medical profession had discarded.

It was and still is difficult progress. But we're making progress. Okay. Well, I want to get to to to Juliet and long and Covid. But I just want to emphasize again, is that if there was a way to make $1 billion on this, this wouldn't be a problem.

Okay? And that's what I just I think I'm not sure if it's every recording I say this, but it's frequent. Every you know, in this day and age, we have, you know, evidence based medicine.

And I always like to remind people that it is really evidence bought medicine. If you have, you know, $100 million, you can start the study. If you don't have 500 million, you're not going to get it to the FDA, you know, maybe even a billion.

Early Diving Cases and Brain Injury Discoveries

I mean, it's that much money to get something new, really approved from the ground up. So just people have to understand that this is not from any bad intent.

It's just what happened. We kept trying to protect ourselves to the point. Now where we have a big, big fences to prevent us from helping ourselves, because the work that you're doing, the work that you did in 89, you might not even be able to do today, you know, I mean, if you were in a medical center, they wouldn't let you.

Well, none of this has been done at the university. All of this has been done in our clinic and right there at times, the umbrella of an institutional review board, you know, to do the experiment.

But all of this has been done in our little clinic. Yeah, but he works three jobs. Yes, but but okay. And so enough about the, the it's not really the politics.

It's just the unfortunate realities of medicine today. And I said maybe, maybe one of the unsung blessings of, of this, of, of what Covid is bringing is we're going to have enough people who look at things differently.

Maybe, you know, there's a lot of money being thrown around and some really smart people, but let's maybe nice to get some of it thrown your way and we can publish a little more, you know.

But so Julia, how did this so how did you get in the middle of Covid and hyperbaric? Well, in February of 2020, I kept on nagging him to write something about HBO for Covid because once, you know, went with hyperbaric oxygen, once the red blood cells are completely saturated to 100%, the oxygen under pressure dissolves in the plasma.

So I thought, that's a way to get oxygen to the lungs, because these people were suffocating on the respirators. And it also reduces inflammation. So that was that's what I saw as the problem.

And also it it worked for the Spanish flu. So I'm kept on telling, would you please write something so we can post it on the it's it's like they're laid or laid.

You've got to write something about this. And then he finally did and boom go ahead. It started with her questioning at all. Yeah. Don't you think hyperbaric oxygen should work for this.

You know it's a lung problem. You're breathing in 100% oxygen. There should be a direct effect on the lungs. And that's what people are dying of with Covid.

What do you think? And I said, well, everybody, you know, history bears remembering in medicine. Everybody for anything that's 25 years or old. But what was the advent of hyperbaric oxygen into the or hyperbaric therapy into the United States?

The Spanish flu, Spanish flu pandemic. And then we went over and discussed the whole story of this. 1918 Doctor Cunningham in Kansas City, anesthesiology professor was in Colorado in the Rockies vacationing.

And he got to thinking, you know, about why the mortality for Spanish flu patients was so much higher in the Rockies. And he said, it's got to be due to the high altitude, low pressure and low oxygen level.

What would happen if we gave the Spanish flu patients more pressure and more oxygen? An epiphany raced back to Kansas City, and he bought an old filter and cobbled together a hyperbaric chamber.

The day it was operational, he had all these planned animal experiments and he was brought a dying Spanish flu patient. He was a medical student. And, the patient.

Yeah. And it's described in a book and in a separate journal article in laryngoscope by one of his residents. And they brought this patient in agonal breathing blue gray.

Taking his last breaths, they put him in the chamber and they didn't have bulk oxygen at that time. It was just compressed air. And they described this guy pinking up his labored breathing, starting to breathe better.

They did one treatment a day for four days and the guy was salvaged. And next thing you know, there was a steady stream of dying Spanish flu patients brought to him.

They were overwhelmed with it, needed a building, 108ft chamber, then a five story steel ball hospital chamber. And that's how hyperbaric medicine started in the United States.

So I've talked to Giuliano Day. This had been done before that story, and she told a story and reminded her of it, and she said, why won't you announce it?

So we put an announcement on the web about this. Look, there's no treatment for this, but this has been done before. Spanish flu, coronavirus. They're nearly identical.

They caused death by respiratory illness, you know, Ards and so on. And the day after I posted that on March 10th, she found an article out of Wuhan, China, where some hyperbaric doctors had treated a handful of patients.

And one thing led to the next to the next we next, I we had an interview with these doctors, the treating doctors in Wuhan through a translator, and he helped the doctors and move on, translate their research into English.

And we couldn't get it. Yeah, yeah, yeah. Well, what ended up happening, they finally decided to publish it in a Chinese speaking journal. And so it's in two journals.

But I took what they had done, part of it that had been released on the internet and had a commentary that got published in a, English speaking journal, Medical Gas Research.

And I said, look at this. There's precedent for it. And now here, the Chinese have done this in Wuhan and salvage six patients, one on a ventilator. And next thing you know, things are multiple studies have been done.

And so you can imagine the long haulers, you couldn't imagine how excited we were to absolutely know that hyperbaric was healing people in Wuhan. And we just thought that would be like on the front page of the New York Times on the 6:00 news.

It went. No, no, it at least, well, yeah, I mean, we we put this in front of us. It was nothing. But we got confront the kernel. We did get it in front to a curia and Louisiana Governor John Bel Edwards I got I did, yeah, explain this.

He was wonderful. He was so supportive. He gave us $1 million to do this. And why not get the hospital to approve the study? LSU's IRB did. We never but the hospital would not.

So we could never do it. And we had the money and we were right here at the epicenter, one of the epicenters of the country, New Orleans, high mortality.

You know, the sick people. But oh my God, I'm going to get it. But, you know, but you know what he did? He wrote the IAB and we published the IAB and sent it to everyone we could possibly and put it on the internet so that other, other doctors could use it at other hospitals all over the world.

And we got emails from doctors from all over the world. Would you? It still didn't, you know, it still wasn't publicized. It didn't go away. But it's still I mean, just just one question for, I mean, is that in you know, we're in I thought in the beginning in New York when they were intimacy.

So this could discriminate for me and for our audience. The difference between being intubated, because I think, I think the pressure have has a lot to do with this.

The pressure on the body, not just shoving oxygen into the lungs, because that didn't seem to work so well. Yes it was. The intubation was damaging the lungs in addition to Covid to two points there.

Yeah. I'm sorry. Go ahead.

Hyperbaric Medicine, Academic Resistance, and Clinical Proof

Did you finish. There's no no, I just you got the idea. Just just tell us the story about what's the what really is happening physiologically. Why it's so different.

Because it is. The effect of barometric pressure appears to be primarily. And this is what when I pointed this out to the, treating doctor in Wuhan, I said to her, are you familiar with what happened with Spanish flu in the United States?

Hyperbaric medicine? Doctor Oral Cunningham? No, they had no idea. I said inadvertently, you have duplicated what he did, but he did not have oxygen. He just used compressed air.

And it was likely a little bit of oxygen effect there. But the pressure itself, barometric pressure is bioactive. And she just it was this animated explosion of conversation between her and the translator.

And it went on for almost two minutes. And I finally said to the translator, what is she so excited about? And he said she was trying to tell her fellow doctors in Wuhan that she didn't think it was the oxygen, that it was the pressure, because what happened was when they would bring the patients down for the hyperbaric treatment, they'd have to take them off their oxygen, put them in the chamber on oxygen, and then they shut them in adjoining and connected to it was another chamber with the medical staff, but they never went in the chamber with the patients.

And what would happen is once they shut that door, some of the patients, their mask would come off, or they wouldn't get it on adequately. And nobody went in there to help them out.

But what they noticed was that even when the mask came off and they just were breathing chamber air, not oxygen, their pulse oximetry didn't drop, they didn't deteriorate.

They were okay on chamber air. And, there is so much literature on the effects of barometric pressure but ignored by me in their hyper hyperbaric medicine field, essentially for 360 years.

And that's what we were trying to point out, is that it is not only some degree of oxygen, but it is the barometric pressure that is so bioactive and anti inflammatory.

Yeah. That's so I mean, I always like to tell people, you know, that's what when they're, you know, they when the people who can predict the weather, when the, when the barometric pressure is dropping.

Exactly, exactly. And look at high pressure days, you know, honey high pressure days and people feel good. Yeah, yeah. It's amazing. We are very. We are connected to this world.

We are we are under pressure all the time. And atmospheric pressure varies on a day to day basis, as much as 80%. In fact, they've shown that when pressure drops, from front coming through, ICU mortalities go up.

Well, yeah, because the inflammation goes up. Yeah. And reduction in oxygen level. Oh okay. Yeah. That's true. That's enough to throw somebody over. This is so exciting okay.

So but so you you got this. And and then you basically weren't able to treat acute Covid patients. No no we were not even with the governor given us this million dollar gift.

We had everybody lined up. We had diving company was going to bring in this big multi-purpose chamber, have it all outfitted, put right on the air dock next to the hospital.

And and just as an aside, this could also be done with every commercial airline. You can blow any jet up to the hospital. They are pressure vessels, right?

Right. Yes. Hundreds of people at the same time in it, in there, plus oxygen. We could have saved so many lives. So that is, you know, I mean, I we had a small story, you know, I was I've told many times on this that we were spared, you know, the ravages of Covid in, in Marion County, where we were, because by and large, I mean, there was Covid, but it was minimal, especially the first year.

Because everybody lockdown, nobody left, you know, everybody, I mean, except, you know, except the nice people who had to work in the stores, but everybody else just hid in their homes.

And we had proposed, an IV vitamin C therapy, the same idea, because it's we the data on this. And we were going to and, you know, nobody wanted to help.

I mean, the hospitals, it just nobody was interested. We talked to them and it was all the same thing, you know, there were so many ideas. They just got shut down.

I mean, you know, it's it's incredible. But yours is especially because you had again. Well, actually, we all had data from, from China, from history that this stuff works.

Exactly. And it just blows my mind that we couldn't that I mean, that that even in New York where people were dying like flies. Well, they like a few people at, NYU Langone, they could treat a few. Yes.

That's what we want to study was done. Was NYU. It was the Long Island campus. They did the study after go and and that's published, and they used a matched control group to show that they had a reduction in mortality and an improvement in overall outcome for patients.

So, and now there are there are I just as I was telling you earlier today for our LSU hyperbaric medicine fellowship, every Wednesday is our didactic rounds.

And I gave them this exact lecture on hyperbaric oxygen Covid disease. There are, I think, 11 studies now that have been published on it. And the bulk of them, they're almost all positive.

And the most recent one was just earlier this year. It was a randomized trial in, South America, I believe it was. And

they stopped the trial prematurely at an interim analysis because there was such a discrepancy between the hyperbaric oxygen and control group.

A hyperbaric oxygen group had normalization of their oxygen levels in three days versus nine days, the patients in the control group, and they stopped it.

Yeah, because it's obviously works. Statistically it works. Yeah. We got it. Now we just got to get people to do it. So so that's acute Covid. And obviously we don't have it.

We don't have many buyers on that front in America. And now so you know, long Covid because you know, as you, you know, I've been talking to people. Yes. This is the immuno.

We do believe this is a local or an inflammatory disease, you know. Yes, exactly. So so just tell us about hyperbaric and inflammatory disease.

Juliette Harch and the COVID Connection

And also while you're at it, I love the details on you know how like you know you. So how much oxygen versus how much pressure. I mean, you can throw that in the story anywhere you want.

And we might question, so just a little backtrack here. Oh, that's hyperbaric oxygen. How's it work? Nobody has really understood this for 360 years. However, we have used genetic therapy.

So, you know, it's been used primarily for wounding condition, one type or another. And to treat a wound and heal it, you got to stimulate growth of tissue, stimulate growth tissue, got to go through the nucleus somehow.

You have to signal the cells to multiply. And divide. And what has been shown is that a single hyperbaric treatment, human cells, you turn on and turn off over 40% of the protein coding genes in our DNA, which is 8101 of our 19,000 genes from a single treatment in the 24 hours ensuing, when they've looked at the actual genes turned on.

The largest clusters are the anti inflammatory genes and the growth and repair hormone genes. Largest clusters of these suppressed genes are the pro-inflammatory genes and the genes that code for cell death.

So every treatment we're inhibiting inflammation, stimulating tissue growth and turning off cell death. Well, as it turns out, the pressure component of it.

So oxygen and pressure pressure component is more the effect on anti inflammation suppressing the pro-inflammatory genes. And the oxygen effect has more of an effect on stimulating the anti inflammatory genes.

So the question of what pressure how much pressure how much oxygen. It's not exactly known. But what people have done is there have now been I was the the actually the news with CBS news in New Orleans.

One of the reporters came to me and asked me if I had treated any long haul Covid. So I said, no, I'm dying to because I know they'll respond because it's an inflammatory thing.

Hyperbaric oxygen, multiple review articles has anti-inflammatory effects. And, anyway, she referred some people and, went about treating them. But the the point was subsequently in the literature, some case reports started appearing.

And then she said ten patients and then finally a randomized trial. These were all done at high oxygen pressures. But using QE, EEG and just clinical dosing.

Also I have had people now I've had over 25 long haul patients, and I've found they can respond along a whole pressure range and oxygen, but it's individual to them.

So it's finding what dose is best for them because that's not all the process to do it. Not all long haulers have the same symptoms is they're all full of inflammation.

But, you know, some of them have, nuance that arthritis, some of them have skin conditions. A lot of them have brain fog. A lot of them complain of fatigue.

Well, it's like cancer variety. And then also people come in with a variety of health conditions before they got Covid. You know, the athletic type compared to maybe the, chubby, not so athletic.

You know, there's all different types of medicine. We're all individuals. It's like you, any doctor you're treating trying to treat each patient individually as opposed to one size fits all in some canned protocol.

You just we are now living in the world and the age of canned protocols, you know, and again, like we know we know we don't live in that world. Not us. Yet.

Not you. Yeah, yeah. Well, because can protocols work? They're Band-Aids, you know. I mean, at best, they they very rarely will ever get to the this the basis of, of healing for the individual.

But they'll stop the bleeding. I mean, that and, you know, and that's modern medicine, you know, like I said, just even like when you think of hyperbaric, I mean, it really, you know, warfare is, you know, this is where we develop these tools and then we have to figure out how to use them intelligently rather than in mass production.

But again, we've lost that skill set. And so I'm, I'm hoping that, as long as people like you were out there coming up with ideas and, and persevering and publishing, I mean, that that's the point that I really want to make is, is how important it is that you actually keep, you know, writing and getting information out there.

I am actually, in the past, about 3 or 4 years ago, I decided that I, you know, I'm in a unique position by history, by what happened, by just so many different, events that have coalesced and that my greatest contribution, I think, at this point is to try to get as much of this in writing and to amplify and disseminate this this way we can.

So that's kind of the I'm still seeing a lot of patients and all, but my responsibilities down at the university are more for one day a week teaching, and then I'm spending a time putting all this stuff together.

So, you'll see more and more coming out. Oh, good, good, good. And it's just getting it out because, you know, I'm, I yeah, I'm constantly amazed, how many amazing therapies are out there, you know? Yes.

They, you know, you said nothing works all the time. But you when you have. But we have so many things that work a lot of the time. And we we don't know about them.

I mean, you know, and hyperbaric is such a, a perfect example. But so tell us more about so when you what got you to start using the Q EEG because that that's a, you know, quite a different idea.

I don't think many people would think about Q and hyperbaric in the same at the same time. Not long. What what what's the evolution and and how is that change your ability to to treat people.

It's a great question when when we when we made the initial discovery on treating, chronic brain injury, it one of my mentors, Doctor Richard Neubauer, who had been doing this 12 years, he was never able to capture the improvements that patients would experience on CT or MRI.

Spanish Flu History and Early COVID Hyperbaric Reports

I now, I've we've since been able to do that, but it's a special circumstance to grow enough new tissue with hyperbaric oxygen to see it grossly on a CT or MRI.

However, you are changing function. So all of this gene expression through all of the other things that are

happening. And so you can capture it on functional imaging.

And in 1990 he published a single case. It's called the idling neuron letter to the editor of Lancet. And it was a 60 year old lady, 14 years post stroke, severe, severe deficits.

And they did a brain blood flow scan and then put her in the chamber the next day and took her out and repeated the scan and right in the homologous area on the CT scan, where the densest part of the infarct was, it lit up with brain blood flow.

And it turns out it was the area of the brain that controlled facial motor and oral motor. Now she was hemiplegia, drooling, no speech, and unable to swallow chew, and had essentially no facial and oral function on that side.

And what was saying is that then brain tissue that on CT is presumptively dead, in fact is living but not functional. It's stunned. And this is known in cardiac muscle.

It's known in other tissues. But of course never in the brain was the dictum. And what happened was repetitive treatment. This lady reacquired function and eventually was able to talk, stop drooling, swallow, eat by mouth.

And she even had assisted ambulation. And so what we decided to do was look at this with divers. And the first cases had been published in divers. Decompression sickness in the brain.

You can only capture little tiny T two spots in about oh gosh, 10% of patients with brain decompression illness and those two spots or those white spots.

This was exactly, exactly in white lesions that nobody knew, just a few of them. But it's a diffuse microscopic disease when the bubbles go through it.

And so what happened, though? They started in England in 1988, doing brain blood flow scans on these divers who were coming in with neurological symptoms.

And almost every one of them, they were positive you could see it. So we decided to start looking at any chronic brain injury, including the divers. And that was the first one where we showed this.

Then the second one to talk about it in my book and show the images. But we would do the scan after we'd done emergency treatment for them, but they had residual injury.

We do the scan next day, put them in the chamber, and after they catch chamber, we're scan them and you could see these really unbelievable changes in brain blood flow that corresponded symptomatically.

They would feel better. So we started doing that sequence for anybody with a chronic injury. But the second scan gave us information about that single treatment right before it.

And what we saw in that scan was 3.5 hours after they came out of the chamber. So it was the delayed effect of what happened in the chamber. But you could never look at the brain in the chamber as you were delivering the oxygen and pressure.

And I finally decided, I said, wait a minute, what modality can we try to look at live EEG and EEG had been used before to look at oxygen toxicity in animals, even in humans.

In Germany this was done. But nobody had looked at it to try to dose somebody. And so I ended up kind of adapting this and then testing it. And I have a wireless headset.

We also have a gel cap that we use that are wired out of the chamber. But I can put someone in the chamber after doing a Q EEG outside the chamber, looking at it, getting it all quantitate it, putting them in and going through a dosing profile of a variety of oxygen levels and pressures, and look at the brain live recorded and get it quantitation.

You can see the brain change right instant view instantaneously. You can see the brain picking up the oxygen, changing colors. The software is so cool because there are 3D maps, so you can look at it as well as connectivity maps with rotating brain phantoms.

And the delay from live brain to the computer is 30 milliseconds. I mean, it's essentially real time. It's really it's stunning. But I can now look at someone's brain and I can see where we are, are putting that brain in its best function at what dose and or interpolate between doses and that becomes the starting point for treatment.

That's something you still have to manage them clinically. I mean, it's not perfect, but but it's guiding, it's helpful. And it's now looking into the brain real time.

I mean, it's just it's changed things. It's too cool. I yeah, I can imagine because otherwise, you know, I mean, you have so many choices of, of oxygen, you know, pressure and so much pressures to, to, to play with.

And you know, I over the years you've learned but you as you say, the problem is you've learned what works for the the situation. But then you still have that individual who's in the chamber.

And maybe they're different. They're, you know, they're hardy or they're whatever. What else? What why they have the inflammation. I mean, that that is, is is the thing.

I think that's what we so interesting, you know, treating people with, with, you know, long Covid is just because one of the things that we discuss a lot in the series is how most of the people had something underlying maybe it wasn't obvious in a big way.

There was a little fatigue. There was a little like maybe when I overdo, it takes me longer to recover than it used to. You know, there was often a little hint of some chronic inflammation that your body was handling, and then you get Covid and you kind of lose control.

And, and so what you're doing is just kind of globally putting back a little the control again. You're, you're you're giving, you're rebooting, you kind of rebooting the system.

I mean, in a way, you kind of turn it around, turn it off and see if it can find a new balance. That's that's a great analogy. You know, it's kind of like what happens in why you don't give a vaccine in the setting of an acute infection with inflammation in a ramped up immune system.

So people with a chronic problem and low grade systemic inflammation, Covid now is this massive immune response depending on your comorbidities and in genetics and everything else.

Why Pressure Matters in Hyperbaric Therapy

And yes, it it just amplifies your underlying problem. Yeah. And so in general, I mean, I know I always ask you generalities when everything is about the particular patient, but still you know how any when you're treating somebody with, well, I don't know if you've had enough long Covid patients, but yeah, when you're treating someone with long Covid, have you found that you need more or less treatments than you do for other, other issues or, it depends on how soon you can get to them.

And, and the fact that it's immune related hyperbaric oxygen and no other treatment will kill the memory cells responsible for the pathology. You know, unless you do a total chemical ablation of your bone marrow and, you know, start all over, with a bone marrow transplant.

I mean, we don't have any way of really killing the immune response of cells that are causing, you suppress them. And hopefully, by the time people have gotten spike protein out of their body and, and the ongoing stimulation of the immune system from it, the immune system can eventually die down.

But you can suppress any response with the hyperbaric treatment. And the other thing it does is the inflammation

and the injury it has caused. Hyperbaric oxygen can help repair that.

So, depending on when you get it can be less treatment or by the time they've had it for a while, you know, you're getting up in the four and a half, 5 or 6 months region.

I tell people, is hard to guarantee they're going to need about 40 treatments, which is what it is for chronic wounding in just about any diagnosis. In hyperbaric medicine.

Okay. Yeah. Chronic wound diagnosis, chronic conditions. Right. Subacute. Acute. It's less. You can suppress it easier. Yeah. And there's you know, you have you really need time for healing.

I mean that that is the thing the body does take. Healing does take time. I mean part is, is that, you know, many times we can, we can ignore, the healing happens kind of quietly in the background when we're sleeping. But.

But when you really had an injury, it takes a lot longer than we like it to take. You know, six weeks, six months is more likely than, Yeah, exactly. But what this therapy does is it stimulates all of those healing processes so it accelerates the healing curve, by all this gene expression, by all the other targets that hyperbaric oxygen addresses.

So it speeds healing. Yeah. Well, once again, it you know, the amazing thing about the body and about, you know, we talk a lot in this series and in other things that I've done about chronic inflammation and having, you know, chronic infections, but chronic infections, generally, you know, sometimes you need to kill them, but most of the time you just need to reestablish immune, surveillance and maintenance, you know, a lot of these bugs or, you know, can coexist.

You know, we especially like the viruses. They co-evolved with us, you know, they're they're they they're doing the dance with our system. If we can just get them to get back into step and that's what it sounds like the, the hyperbaric is doing, it's giving you it's like rebooting your immune system back to a place, where it was stronger when it was balanced between inflammation and, and pro inflammation and anti inflammation was a little more in balance. Yes.

No host defenses. Exactly. Yeah. So we still might need to kill a few things but hopefully less. And that's what it's doing in acute Covid. It is tamping down this tremendous cytokine storm and inflammatory response until the body's defenses and the immune system can become more balanced or or regulated.

Yeah. You know that that's I think that that is you know, my, my story of of chronic illness on all levels is just a failure to communicate, you know? Okay.

I mean, when this system is, is, is is in a balanced communication, you know, recovery does happen just like it's supposed to. Over a few weeks. People get better.

And when you don't know, most people are don't remember, Paul Newman. And, what was that? Cool hand Luke. Cool hand. Luke. What we have here is a failure to communicate. That was one.

And that's that's what we have in chronic illness. So, I, you know, it's the it's the giving the system a chance to recover. I just can't get over how.

You know, on one hand, it sounds so simple. And just. I said, before we go, do you have a, a one way of looking at, like, in your mind, why has this knowledge not gone far enough?

I mean, what's been so frustrating about it, that's actually the subject, part of the subject of, a book that I wrote is that when I was in medical school, my junior year, the very first rotation in the hospital, basic medicine, I'm walking down the hall with the junior resident, and, you know, junior resident is the main one who's doing all of your clinical teaching.

And we walked by a group of doctors rounding outside this room of four patients. And I overheard one of the doctors say, well, how about hyperbaric oxygen for this patient?

And, you know, the third year medical school, you don't know anything. And yet I waited till we were out of earshot, and I asked my resident, I said, what is hyperbaric oxygen?

He said, oh, forget it. Don't even ask. Another question about it is unscientific been thoroughly disproven. Charlatan ism, snake oil sales and fraud.

I thought I'm okay and I did. That was tucked away as was gospel.

Long COVID, Inflammation, and Individualized Dosing

I you know Johns Hopkins, two Johns Hopkins and eight years later I'm down here in this diving medicine practice. And I went to the government course on physician diving accident management taught by the National Oceanographic and Atmospheric Administration and I.

It was also embedded in it was all this hyperbaric oxygen therapy here where all these animals died. And some clinical studies showing the science of this.

And it's like, where is the disconnect? And a lot of it happened. Essentially it was medicine in the United States. Nobody really knew it, knew anything about it.

In 1959, 1960. And as people started using it, people stood up and were making claims about it. Oh my gosh, I grew hair. This patient with a stroke got better.

The specialty of hyperbaric medicine, which was so mature, could not explain scientifically what was going on. And then my mentor stood up and published some an article on treating some multiple sclerosis patients, and he was treating them for what was one of the accepted uses, a bone infection in their foot.

And he said, wow, they're neurological deficits compared to their Ms. got better. And there was a firestorm of controversy because now he was saying that you could treat a chronic neurological disease that the entire neurology specialty had taught us it's impossible to treat a neurological disease well.

And just to finish the story here was this fledgling specialty fighting for credibility. They had now gotten it reimbursed in the hospital setting, and he was charging one eighth of the amount in the outpatient setting.

And the medical society, everybody went after this guy. And you know, the science of what he was saying was totally ignored. It was just the whole thing got discredited.

Medical society walked away from it and didn't want anything to do with it. And hyperbaric medicine got disparaged as, you know, a treat for diseases, nobody understands it, etc.

and so my generation of doctors was essentially taught it was a fraud. And, it's tough reversing that misunderstanding. So yes it is. Yes, yes, yes yes yes yes yes, I can only say and people it's.

Yeah, it has to. It's one doctor at a time. And yes, that is the unfortunate thing, you know, a nation at a time too. Yeah. I mean and it's not. And I wish to I want people to always remember that it's not if here's this evil cabal, it's mostly just ignorance.

And, and ego, you know, getting together because, you know, and it's, and that we depend on in medicine, we depend on a few people to know the details because there's so much to know.

And when those few people make pronouncements, everybody else listens. And if those people are being motivated by their own self-importance, things don't move well.

And just just reminder that it was in in 1980, my surgical resident, my chief surgical resident told me that, you know, as far as he was concerned, a total anything other than a total mastectomy was malpractice.

Right. And, you know, the Italians had proven in the 60s that it was useless. But it took how long and, you know, I mean, so he wasn't saying it. Sure. Yeah. Right.

It's it's just so became doctors are not out there to hurt you. They really help wanted they want to help. But we just are human. And, again, ego and ignorance keeps us not moving forward sometimes.

Yes. And, you know, one of the other problems was the specialty of hyperbaric medicine. Couldn't define its own therapy. What they had done was, when asked what was hyperbaric oxygen, they said, well, it's a therapy for recalcitrant, hopeless and otherwise.

Expensive? Yes. Expensive, recalcitrant and otherwise hopeless medical conditions. And so they defined it. It certain hopeless, expensive, recalcitrant and hopeless medical conditions.

Well, the certain was determined by this little committee of hyperbaric doctors, and they what they did was they tied the definition to this list of diagnoses.

This hyperbaric oxygen is this it's the treatment of these diagnoses. Well, those were historically ones that had been applied to successfully, but it didn't tell you what you exactly were treating there.

And so when people looked at that list, a diabetic foot wound, air embolism, chronic bone infection, compromised flap, and nobody could draw the connection.

And the rest of the medical profession looked at it like, what? We don't understand this, and in the confusion is another reason why this got discredited.

Now we understand it. This is an epigenetic therapy with two drugs pressure and oxygen. You created a new definition. So state the new definition. Well it's it's the use of greater than atmospheric pressure and pressure of oxygen to treat disease pathophysiology.

So what we're not treating is we're not treating a diagnosis persay. What's been shown is hyperbaric oxygen treats the underlying disease processes that caused the disease and those disease processes are actually common to many different diseases.

So what we have is a treatment for the underlying problems that are causing the diagnosis. And it's somewhat generic the effect on them. Right. And it's you're 100% right.

QEEG-Guided Treatment and the Future of Hyperbaric Medicine

And now we just got to get the FDA to understand that that's a reasonable thing. Because at this point, unless you have a specific diagnosis, the FDA isn't going to approve it for anything you know.

So yes, I agree with that. And I hopefully they'll change their minds because, you know, this, it would be as we begin to understand more and more the underlying drivers of disease, we can find treatments and understand that the names we attach to syndromes don't necessarily serve treatment.

Unquestionably, unquestionably. They're they're descriptive. You look at neurology, they're descriptive boxes that if you have a certain constellation of symptoms, you kind of fit that diagnosis.

But it's not necessarily defined by the underlying areas of the brain that are involved in the process is causing it. You know? Well, I think for a lot of medicine, it's very hard that I get I this is my theme is that medicine is not science.

And we and until we and we can, we have to apply scientific principles when we can. But if we make if we worship the God of science, it doesn't apply to the God of science requires single variables, okay?

And that's not treating people okay. Until we figure that out, we're going to be very disappointed. We're going to treat, you know, like we're going to do very well at some cancers that we can identify 3 or 5 genes.

But the rest of medicine, we're going to be bandy pushers anyway. But you know, and I think we're an optimist. The optimistic note is hopefully we're going to help get the word out and get more people to realize that, there is hope for a lot of the problems they're having and especially, you know, the long haul people with a neurologic diseases and the lung and the lung issues, you know, hyperbaric oxygen is something to think about.

Yes. You know, it's happened. Yeah, that thank you so much for your work. I said, I don't know if the, patients who I mean, I've been kind of not I've been in a kind of a student of of of, medicine for a long time.

And, you know, I've seen I myself have gone down that path of being told that something is garbage. And you put it aside sometimes for 20 years until you bump into it again.

And so that happens over and over again in medicine. So please keep an open mind to things, folks. We don't know everything just because the fancy doctor at, you know, that they hired for TV says something.

You know, it could be true, but look a little deeper. So, anyway, Juliet, that Dr. Hearts. Paul, thank you so much for your time. I really appreciate it.

And, sharing your wisdom and your life's work. It's a beautiful thing. So thank you. Thank you. I want to say just last thing, Doctor Gordon, I. This never would have happened.

We never would be at this point had it not been for Juliet. This has been a team effort and I they go into all the details. But I would just say thanks.

So much of this has happened because this was a joint effort. So I, I, I saw that from the beginning. That's with Doctor Papaya who, who had the privilege of meeting you both, recently, you know, told me, you know, she she met Juliet and it was like, She could see it because.

Yeah, it takes it takes a team. It does because I thank you both. Thank you so much. It was a great pleasure. Thank you for tuning in to Doctor Talks.

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