Breathe to Heal: The Real Science Behind Hyperbaric Oxygen Therapy (HBOT) Transcript

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Introduction to the Podcast and Guest

Neurologic conditions are probably among my favorite conditions that we treat. The mechanisms start with just increasing oxygen flow to the brain and we see a huge increase.

But you know, the brain is especially vulnerable to oxygen deprivation and hyperbaric increases. Cerebral blood flow. But more than that it reduces cerebral edema up to 50%.

And in one treatment, it's so fantastic that we've seen this and that's research based. You know, obviously it's on rats causing injury, but that should change size.

But it's to look at anything. It's an inflammatory neurologic condition. Welcome to Doctor Talks the podcast where every episode leads to a healthier you.

Join us as we navigate the world of optimal health, uncovering groundbreaking strategies to conquer chronic disease. In each episode, we'll bring you the latest insights from leading health experts, medical innovators, and wellness warriors.

If you're seeking to transform your health journey, or if you're looking for answers to burning questions, you've come to the right place. Get ready to unlock the secrets of lifelong health and vitality.

This is Doctor Talks, real talk from real doctors on the issues that matter to you most. All right, well, on today's episode of The Functional Edge, I'm joined by Doctor Alexander Lightstone or Sand, a dedicated physician whose journey bridges both allopathic and naturopathic medicine.

After completing his medical education at Aureus University School of Medicine and further expanding his studies sorry, his expertise at southwest College of Naturopathic Medicine, Doctor Boorstin became a diplomat of the American College of Lifestyle Medicine, focusing on lifestyle interventions that prevent and reverse metabolic disease.

His passion for hyperbaric oxygen therapy, or H bot as well, now refer to it, was fueled by his own remarkable healing journey following a major injury, five surgeries and a non healing fracture, 60 hyperbaric dives transformed his recovery.

Now, as the head of Business Development and Community Outreach at RCS oh two and a certified trainer for the International Board of Undersea medicine, Doctor Dawson works tirelessly to promote safe and effective hyperbaric treatments.

We'll be diving into his personal experiences, the science between behind each bot, and how this innovative therapy aligns with the principles of functional and lifestyle medicine.

So thank you again for joining us. Yes, thank you so much for the introduction. And I think I need to update that. Now it's been seven surgeries on that arm.

Oh, wow. Yeah. So it, it's interesting how our path brings us to where we're at in medicine. I'm sure you know, as yourself. You didn't get started on this functional medicine track.

Personal Journey into Hyperbaric Medicine

It didn't exist when we got started, right? Yeah, but I think we found that what we do in our own lives and what we recommend for our patients developed that field.

So it's it's great to see that. So the American Board of Lifestyle Medicine is very much surrounded by functional medicine and, and really teaching our patients how to take accountability and take the steps to, to heal themselves.

And it's the things that we already knew and and are doing. But we also find that as physicians that sometimes it's easier to, to give our patients what they want as opposed to what they need.

Yeah, yeah. That's great. Okay. Well, I'm just going to actually open my door so my dog could get in because of it's scratching on the door. Yes. No. I wish I had my dog in clinic today if I did it.

I don't know if you want to see Teddy. Yes, of course you do. I'm sure everybody does. Oh, my gosh, I know that is Teddy. He's he's a multiple. And has Teddy been in the chamber yet?

Teddy goes in the chamber with me almost every day. I am right there with you, in our home chamber, our dogs. As soon as I open the door, they're getting ready to get in.

They can do to extend their life. Their life? Yeah. And the effects that we see for them, they're so real. Because the placebo effect, it all effects humans.

You know, dogs. I mean, both my dogs, they're boxers, they have hip dysplasia. And when treating regularly, it is just it's fantastic. The results. Yeah. Yeah.

I can't even begin to tell you. I mean, I was unfortunately in a little fender bender and Teddy got hurt, when we were in this little car wreck, and, he actually dislocated his shoulder.

And since then, you know, we've I can't even, you know, it's been over a year. It's been maybe close on two years, but he's been going regularly in the chamber with me, and I don't put supplemental oxygen on him because, you know, I don't want to deal with putting a mask on a dog or putting him in a box.

You know, it's not easy. I have I have the masks for our dogs. They made it. Well, yeah. Yeah, it's like been a muzzle on the dog. Yeah, they. Yeah, we don't want it.

And the reality is we'll get into this talking about hyperbaric air versus supplemental oxygen. Because there's a lot of new research on this. Yeah. It's hard to know exactly where to to land on this newest research.

You know, there's benefits at all levels. And we're starting to see that. And I think, you know, Jason Saunders brand new research coming out right now kind of dives a little bit into that.

And he talks about all different pressures. And you know, we may have a little bit of a different bias. And I think we all come in to everything that we do with a bias.

It's it's hard not to. And as allopathic physicians, you know, we we prescribe oxygen. And as a chiropractor, he may not prescribe oxygen, and it may affect his bias a little bit differently.

However, his patients get results. Our patients get results. And we have to take a step back and say, well, what are we both doing? The same. It's the pressure.

Yeah, yeah. And so even without the extra oxygen Teddy has gotten, you know, immensely better, you know, and that's just with, just with the pressure and just breathing room air.

So it's been great. Yeah. Let's dive into hyperbaric. Okay. So can you give us an overview of what hyperbaric oxygen or H bot is and how it works on a physiological level.

Yeah. You know and so this is like, the elevator talk on hyperbaric. And it's so hard not to want to dive into all the aspects of it, but it comes from understanding, first of how oxygen is carried in our body.

And most people realize that oxygen is down to your red blood cells or your hemoglobin. They may not realize that it's carrying about as much as it can at all times.

Just about every patient has put on a pulse oximeter on their finger. And and they've, you know, 97, 98 to what does that really mean? Well, 98% of your red blood cells are carrying as much oxygen as they can.

And that's just for molecules. They're never going to carry a fifth molecule, no matter what you do know, you can do it. Lance Armstrong did and get more red blood cells.

And and there's other ways to try to get more oxygen, but you're never going to carry more than what your red blood cells can carry. And further than that is not all that oxygen is actually available.

Your hemoglobin is greedy and it's going to give up one molecule and maybe that second molecule. But those third and fourth molecules, they're not coming off until we're talking about that runner's high or the point of, you know, almost dying.

You know, you you just don't get them. So you really only have 50% of that available. So why is that so important? As we start talking about hyperbaric or hyperbaric, more pressure simply means using pressure to force the oxygen into the liquid component of our body.

And everybody's heard that our body's 60 or 70% water, and that water is really plasma. So we're turning your body into soda, we're taking a liquid, and we're forcing a gas into it until it becomes soluble, until it dissolves.

So now we carry more oxygen, but it's not bound to anything. It's freely available, has three atmospheres, the highest pressure we can treat it. We're increasing our plasma concentration 1,200% and it's all freely available.

So that's the crux of how hyperbaric works. But what does that really mean. So yes, we have more oxygen available. Your body uses oxygen to make cellular energy.

And this isn't the eastern idea of energy in our bodies is Western medicine. It is creating your your mitochondria, your ability to make more. Everybody knows the mitochondria is what the powerhouse of the cell that power is, ATP.

We make more of it with hyperbaric. That means more ability to heal, more ability to recruit cells. And historically, we've always thought that all the benefits of hyperbaric were inside the chamber.

And new research has shown that's really untrue. There's benefits in the chamber. There's benefits for giving tissue what it needs. But when you get out of the chamber, there's a whole other cascade of effects that leads to other growth factor releases, other stem cell release, and maybe 50% of benefits in the chamber, maybe 50% out.

We don't know. Maybe it's 20%. It benefits the chamber, 80%. It's getting out the newest studies on that or only just a couple of years old. And we're talking about the hypoxic hypoxic paradox by Doctor Afridi out of Israel.

His research on post-Covid on, you know, DNA protection of hyperbaric. It's all fantastic. So that's the long elevator speech and it doesn't even scratch the surface.

Yeah, yeah. It's awesome. What are some of the most common conditions for which each body's currently used, both in conventional and functional medicine?

You know, that's another one of these questions words. So in conventional medicine, the 15 on label indications. And you know, just until last year, 14 on label and just a few years before those 11 on label indications, I was just say the most recent meeting where we're talking about voting on some brand new indications.

Hopefully irritable bowel syndrome posts, possibly looking into traumatic brain injuries again, although I know that there's been a lot of pushback on that.

We'll get into that. But so the most commonly treated probably are wounds. However, hospitals are terrible at this and it has to do with inclusion criteria.

What I mean by this is just because you have a diabetic non healing wound doesn't mean that insurance is going to cover. It doesn't mean the hospital can treat you or the time that they take to get you qualified to get in.

So covering hyperbaric in the hospital means that we're looking at a lot of wounds, maybe gangrene. Now we're talking about something called avascular necrosis of the femoral head, not enough blood flow to the hip where the bone starts to die and migrate.

We're looking at other indications, but what about avascular necrosis, the scaphoid? You've probably seen this scar on so many people, because if you fall on the outstretched hand, you have to worry about that bone not having spots, pointing, dying.

That's not an improved indication, but we see that if it works for the hip, it's going to work for the hand. So what do we see? We see a lot of off label indications.

I have to say that more commonly now in our facilities we're seeing a lot of neurologic conditions, but we see a lot of post Covid and why do we see all of this post Covid and mom Covid?

It's because traditional medicine has had a really hard time with treating this. They're treating each individual symptom and they might be giving people stimulants for the fatigue, you know, sodium for the the the pots.

You know, all these different drugs. The patient's not better. And you remember traditional medicine doesn't really look at, you know, brain fog as a diagnosis.

And it's a hard diagnosis. We can't quantify it. Yeah, but hyperbaric is the only treatment I've found that really looks at all of those symptoms and is significant for them.

So what walks into our door every day? Huge rise in post-Covid. Of course we have a lot of patients treating for cognitive function, whether it's somebody it's already declining or protecting their cognitive function.

I'm here in Scottsdale, Arizona, and we have a huge wellness movement. You know, we have patients that are come in to treat just for general wellness, you know, athletic injuries, you know, sports injuries.

So it's it's it's hard to talk about hyperbaric without starting to sound a little bit like snake oil sometimes because, like, what? Can't we treat it this way?

If it if your disease process has an inflammatory component, more than likely hyperbaric will play a role in it. It's not a cure for disease. It's a foundation to give your body the ability to heal.

It's one piece of the puzzle, but it's a good piece of the puzzle. Yeah. And just also just to back up a little bit when you say when you talk about approved indications, you're talking about these 15 indications that insurance may or may not pay for, like, yeah.

So beyond beyond these 15, they're not going to pay or consider paying for it. But but for these 15 conditions you might get insurance to pay for the, the hyperbaric treatments.

Yeah. So that term approved or on label indication. You know it's kind of a misnomer. And it's kind of like when we look at drugs in general in medicine, I mean, there's a couple drugs that have almost never been used on label.

Yeah. I mean, you talk about things like Viagra. Viagra is used to treat pulmonary hypertension and extremely

concerning, disease. And it's an effective process there.

It is not FDA approved to treat what it's used for. More often than not. You know, Botox is not FDA approved to treat all of these fine lines wrinkles.

It's been approved to treat migraines. And another. So, using something off label medicine is historically where we determine that. Great. We find a medication that's not going to cause an issue for patients.

But we found that by using a regularly, we found other indications that it may be more effective for. Right, right. Absolutely. Okay. So what makes H such a powerful tool for healing?

And why do you think it isn't more widely utilized in mainstream medicine? So it's it's a powerful healing tool, because if we look at its mechanisms, there are so many mechanisms we're just starting to understand.

So hyperbaric has been around a long time, you know, in the United States, you know, looking back, 1963, JFK's treating his infant son in a hyperbaric chamber.

Go back to the 1920s, 1930s. There were hyperbaric facilities, you know, 1950s hyperbaric, surgery centers where they were doing surgery in them. So it's not that it hasn't been around a long time, but most of the mechanisms that we now understand from hyperbaric all come from research. In 2019.

That was just yesterday. And so that was the discovery of his one alpha hypoxia inducing factor. And that was a Nobel Prize in medicine in 2019. And so with that amazing research, we've now realized that we affect over 8000 genes with hyperbaric oxygen therapy turning on or turning off over 8000 genes.

So how is it such a powerful tool for healing? Well, we have anti-inflammatory properties. We we target certain, you know, cytokines that are potently anti-inflammatory.

It's analgesic. It decreases pain. The same mechanism that that's targeted by ibuprofen. Hyperbaric oxygen therapy is a Cox two inhibitor. It's the same target as high as ibuprofen.

If a patient comes into me in pain and I ask them, or do you normally take ibuprofen, they say, oh yeah, it's the only thing that really helps. I say, great, hyperbaric is going to take away your pain as well.

So, as far as on the anti-inflammatory side, we upregulate some of the other side of the inflammatory side. So we have there's pro-inflammatory and anti-inflammatory.

We increase, you know, cytokines like IL ten, which is a huge part of, of, autoimmune disease where we get deep into that, we can talk about the DNA protective aspects, that telomere aspect, that getting cells back into their cell cycle for cellular senescence, you know, stem cell, mobilization, growth factors.

You know, we can talk about platelet derived growth factors, which is this brand new aspect of really focusing on. And so many people are big believers are using, you know, platelet rich plasma for injections.

And it's so amazing the results have happened, whether it was from my wrist when I was in pain, or maybe my scalp to try to retain some hair.

How Hyperbaric Oxygen Therapy Works

You know, there's so many different ways it can be done. We can increase platelet drive growth factors, just the hyperbaric. So now if I have patients tell me I'm going to get pure PSA.

Great. Do 20 treatments with hyperbaric first. So when they do that blood draw you have the most growth factor. So that's a little bit. But why hasn't it become more mainstream.

Oh that is really hard. And it's it probably comes from education aspect. And I mean doctor Ward I don't know about your education, but for mine, I was talking about, say about hyperbaric.

My first approach to hyperbaric was as a patient. It was not something that was taught to us in medical school or in our internship or otherwise. It wasn't until you get to to wound care or subspecialties, and even then, it's not always.

And then the reality is that what is taught is that it's expensive and it's risky. Yeah, but the reality is that it's not expensive in terms of most hyperbaric treatments or, or, sorry, most, medical treatments or even prescriptions.

And then the other side of that is, you know, everything in medicine has risks, but hyperbaric incident rates are so extremely low. And look at this from a a really easy way to quantify this is if you as a provider add hyperbaric to your malpractice insurance.

It is a tiny increase. Now try that IV therapy to your jeer at malpractice. It's a huge increase. They're looking at where the incident rates are. They're saying it's much more of a risk than hyperbaric is.

But people who fit IV would go and have somebody say, no, no, no, don't go get an IV. The risk is too high. Yeah, yeah. You know, so when I reach out to other providers, you know, and ask them about it, they're like, well, no, it's for wound care.

They simply they've. Yeah, we just don't you just don't know because it's not out there. And and I think that's part of, hyperbaric problem is it just sounds too good to be true.

Like it's it's fixing all these things. And people are like, well, if it's all that, why haven't I heard about four? Why hasn't my doctor recommended it for. Yeah.

And then you have to go into the, the whole. Well, it's just not embedded in our educational system. It's not. And they don't realize it until it's a personal experience.

Almost every in my field comes to it. And our field, sorry, comes to it from a personal experience, personal injury or a family member. I don't know how many of these orthopedic surgeons that were referring people to us until it's a family member and they wonder if they can for a family member.

And once I see that change, all of a sudden I'm seeing their patients regularly. Yeah. And we work with orthopedic surgeons. We're a referral based clinic and so we almost we will see a huge number of surgery patients.

Yeah. Yeah that's great. So are there different types of hyperbaric chambers and if so how do they compare in terms of effectiveness and use cases. So yeah there are a number of different ones.

We can go and look at the regulatory aspect. So there's class A chambers. These are meant for more than one person multiple chambers. There's class B chambers which are called mono place chambers meant for one person.

Class chambers meant for veterinary obviously the best chambers and then there's mild hyperbaric. So it would be termed an altitude bag. Now that's the wide of it.

But now when we narrow that down mono placed chambers, you might see there's some that are filled with 100% oxygen, some that are aren't oxygen. Compressed chambers I think are very quickly on the way out.

We don't see this as much. The chambers that we both use in our clinics are not compressed with oxygen. And this is the future. You know, it's the efficiency aspect, but it's a patient safety aspect.

And, you know, we've all seen this, tragedy that happened very recently in hyperbaric medicine. And it was a chamber that was compressed with 100% oxygen.

And there's been a number of these chambers throughout the years. And and most of them don't have incidents. It's not that this is inherently dangerous, but it's more dangerous.

And everything we can do to reduce that risk to our patients. So if we're talking about different types of chambers, you don't have more effective treatment by compressing the chamber of oxygen.

You only absorb oxygen through your respiratory system. Yeah, a little bit through your eyes, but not through your skin. So why would you compress the chamber, right.

Well, you don't have to wear a mask in those chambers, but that actually increases some risk as well because if I need to turn off the oxygen for any reason, that chamber has somebody having to put on a mask to breathe the air, we're in chambers.

You literally just turn off the oxygen and it's off. And that gets us talking about oxygen toxicity. So as we get into mild hyperbaric chambers, you know, new research is coming out on these chambers.

I have patients I treat it low pressure, you know, especially pediatrics where pediatric center as well. And, you know, I've got pediatrics for treatment 1.18 to 1.2, 1.3.

Yeah. The vast majority my patients are treating above 1.5 to 1.75. And I have patients treated 2.8 and 3.0. We treat across the spectrum. Why do we do that is there's a dose dependent relationship with oxygen.

Certain tissues are going to need higher pressures. Certain tissues like neuro tissue respond better to lower pressure where those cutoffs are. That's all new to us. And it's hard to know.

And the reality is that, as I mentioned Jason Saunders earlier, but I'm going to mention again, because his newest research is coming out on this topic specifically, and I saw him posting a little bit about this.

I haven't had a chance to read it. I don't think it's 100% out there yet, but what I have seen is very exciting. In 2023, we saw with hyperbaric air at 1.38 to, there was a 50% increase in circulating stem cells.

That's fantastic to see. Yeah, a 2.08 to with a series of treatments and these 20 treatments, you saw an 800% increase. There's probably somewhere in between there that's the safest and best place to be at 2.0.

It's not inherently dangerous. I have patients treat that level all the time to level. I treat that quite regularly, but it's hard to know. But as we talk about these different chambers, probably the biggest thing to talk about is making sure somebody is in a safe chamber.

Safe means tested and approved. So we can talk about FDA and I'm not looking at them as the end all, be all. But what I'm looking at is it means that somebody tested the chamber, the asthma and PVC.

So this is the same group that said, hey, don't make your own submarine. And go look at the Titanic. Yeah, they they were right. Don't do those things.

Well, if chambers are coming into America that are not tested, these are the ones that give us the most anxiety because incidents happen and these incidents happen actually quite regularly.

They don't make it as to the forefront of approved chambers, because those have to be reported were chambers that are not approved, kind of fly under that radar a little bit.

So the first thing I tell everybody is if we go into a center, the first thing you want to do is make sure they're using approved medical devices. If they have a physician, very unlikely they're using unapproved devices because neither one of us are going to risk it with other medical devices or facilities.

It's just doesn't make sense. So it's just something that I will get you there. So, long answer for there's a lot of

different chambers and they're probably all somewhat effective.

And it's hard to know what is most effective.

Common Uses and Approved Indications

I would look at the research and say, hey, the research for what I'm looking to treat was at this pressure. I should probably treat as close to that as possible.

Yeah. Yeah. What what are some of the most, significant misconceptions about a spot that you frequently encounter? Oh, it's oxygen toxicity. To say that every provider that I'm talking to or talk to about their patient, you know, I might call a pulmonologist and say, you know, I've got a patient that come into our facility.

I'm concerned about their COPD before we're talking about getting them to a chamber. I need to understand a little more. They say, oh, well, I'm concerned about oxygen toxicity.

I'm like, really? You are central nervous system. Oxygen toxicity has an incident rate of 0.068%. Or facilities here in Arizona have been open for 19 years.

I've been an owner for about six years now, and, I've never once seen it. It doesn't mean we all practice for it and prepare for it to have emergency procedures.

So, it's generally so rare now that the pulmonologist say no. I was worried about pulmonary oxygen toxicity. I say, great, that. Okay, I'm concerned about it as well.

So we measure our patients oxygen tolerance units. Your OTAs. It's a dose dependent here as well. It's the partial pressure of oxygen times the time in minutes.

And we have a cutoff in our facility and our cutoff and our facilities well below the range that we cause. Any concerns. However, pulmonary oxygen toxicity is a little bit of fluid buildup in the lungs or irritation.

And that's the reason we don't treat, you know, back to back. We have to have at least four hours between treatments. Otherwise we create too much airway inflammation.

And the good news is that fluid absorbs. And if we catch catch it early on 100% reversible. So we check our patients. We restore our patients lungs every single day.

Make sure there's no concern there. If there is a concern, we take one day of treatment. If there's an issue after 24 hours, yet we're referring to a pulmonologist.

This is why we go to providers, to doctors to do hyperbaric. It's why we don't do this at the gym. You know, they don't know what's going on with it. So that's the biggest misconception.

But the other part is the, the, label indications, the approved indications. Yes. In the US we have 15 approved indications in the international community.

We're looking at about 130 approved indications. You know, we have about 130 indications that have good research behind them showing benefit. And so our board, the International Board of Undersea medicine, will teach, of course, the approved indications and about 30 off label indications that we believe that there's enough research to meet the level that we use here in the United States and constantly looking to see what, you know, new research is out there.

But, you know, I think that we're going to see a huge number of, approved indications in a short period of time here. Yeah, yeah. So I understand that you have personal experience using Hobart for healing after a major injury.

Can you share that experience and how that experience shaped your passion for, medicine? It's. Yeah, it shaped my passion, shaped my career. It's shaped my life so very early in my career.

So I. I was on a surgery track the entire way before medical school. I was a surgical tech. To me, medicine was surgery and nothing else. So it's never going to be a pill pusher.

And and I come from, you know, a family. You know, my father's a surgeon. And so, you know, I had scrubbed 500 surgeries, even before applying to medical school.

So this is my passion. Well, very early in my career, I was involved in a crush injury. My, arm was crushed. So much so that the bone couldn't be put back together.

After about my second surgery, there was serious conversations about amputation. And, I said, absolutely not. I trust you guys, but there's no urgency in taking my arm off.

You can only take it once. I'm not willing to take that step yet. I'll let it, let it hang there. And I said, you know, we have to do something. I said, well, you you really don't.

It's not infected, you know? Let's wait and see. And that's what plastic surgeon said. Well, have you guys started doing hyperbaric for him yet? I was like, what's that?

No idea. I never even heard of it, actually. And so they're doing 60 treatments in 40 days. I pretty much lived in that chamber. The swelling went down so much in the first few treatments that they were able to visualize and see everything blood flow coming back.

And I said, well, why don't we try a bone graft? The first one failed, the second one failed. But after 60 treatments, my third bone graft took less hit my arm.

And yes, I mean, you know, there's a significant difference in my arms. I've got scars. And, you know, we might be able to see here. And, you know, my pronation is terrible.

It doesn't move much. However, I can list I can go do things like, I can live a full life and I still have me here. Yeah. I had said, you know, doc, whatever you think is best, you know, let's just go.

Right. You know, I haven't been much different situation. So it's my career shaped my belief. And that's what got me over to naturopathy side of medicine as well.

And I'm not a natural path. I did attend Southwest College naturopathy medicine, non-degree seeking. I got sick and tired of being told that this is the only approach in medicine, and my patients are getting results of things I'd never heard of.

And I said, you know, I can't live in this box. I have to be open to these other things. And there's some things in naturopathy like medicine that, didn't resonate with me.

And maybe I have a hard time with, with my current understanding. I'm still trying to be open to everything new and some things to say.

Why Hyperbaric Is Underused

That sounds a little dangerous. I can't recommend it. But at the other end of it, I say that, you know, so there's a benefit for my patient. And the risk seems low.

I'm going to be open to it. So, you know, this changed my thoughts a lot, and it changed my thoughts on, the surgeons and and everybody else who is a surgeon.

You know, if you're only tools, a hammer, everything looks like a nail. Just because you cut to just because you know that you can replace that joint.

Otherwise it doesn't mean it needs to be done. Yeah. I like people to step back and say, where's the urgency? Let's take some time and see what else can be done.

You know, it's amazing how many surgeons I talked to that don't talk to their patients about functional medicine, about diet and nutrition and peptides and otherwise.

It's, yeah, we've talked to them about that. And like, the insurance doesn't cover it. My patients wouldn't do it. I'm like, and your patients won't heal as well.

Right. This is what you would do for yourself. So yeah, that's, a lot of what changed my my beliefs in my role and what I do. Right. That's awesome. So there's a growing interest in HBA for neurological conditions such as traumatic brain injury, stroke, cognitive decline.

What are the key mechanisms by which sport supports brain healing? Neurologic conditions are probably among my favorite conditions that we treat. You know, the mechanisms start with just increasing oxygen flow to the brain.

And we see this huge increase. The, you know, the the brain is especially vulnerable to oxygen deprivation and hyperbaric increases cerebral blood flow.

But more than that it reduces cerebral edema up to 50%. And in one treatment, it's so fantastic that we've seen this and that's research based. You know, obviously it's on rats causing injury but that huge change size.

But as to look at anything it's an inflammatory neurologic condition. And you know when I first got started in this industry working with people who were treating autism, I was like, guys, I don't know about that.

I don't know about treating autism or hyperbaric. It turns out I didn't understand autism. I didn't think of it as a neuro inflammatory disease. And once I understood that, so I said, of course it's inflammation.

We treat inflammation. And the results for these children with autism is, it's fantastic. Number of first words spoken in our facility is, it's amazing.

So that swelling in the brain, that information. So this is one of the first things that we see a change in now, neuroplasticity, creating a, different route to the same information is another aspect of hyperbaric.

It's just fantastic. And this takes us back to Doctor Friday's studies out of Israel, and he's one of the first people that proved that we could see late stage neuroplasticity.

These are my patients have had strokes, you know, months or even years earlier. And I stray from anecdotal evidence. But I have a patient that she had a stroke who was 14 years earlier, and she came in, everybody said, you know, I don't really have a research to show.

If you get a benefit. You know, I think that there's going to be benefits for you. Overall. I can't say what we'll see for you on your stroke. And so she did a series of treatments for this.

And one day, you know, she's coming out of the bathroom and she stops. She goes, oh my gosh, my walker. Right. Okay, we'll grab it for you. We'll grab it for you.

But the next chamber, she goes, no, this is the the first time I've walked without my walker in 14 years. She got out of the chamber without even thinking of it, walked over, use the restroom, got out and walked back and was like, wow, steps are taken and she's made fantastic, you know, steps.

Since then, however, I always try to to give, realistic expectations. The expectation for my stroke patients isn't to

get back to normal is to save whatever we can.

The stroke causes a physical hole in the brain. Our brain doesn't heal with a scar. It heals with, like with active necrosis, which means there's a hole.

Now, outside of that hole is an area where the brain's not doing its job. It's called penumbra. The penumbra is the areas of low metabolism. We wake that up very early.

The very first results we see are there. And so our patients come in. And for the first few treatments, they start to see something. They love it. And then maybe they don't see anything for a little while.

It takes longer more treatments to see those results. But I always wanted to know that we're trying to create a new path to that same information. We're not going to get everything back.

More than likely, we see speech come back for a vast majority speech and swallow. And why is that so important? Speech is, you know, socially isolating without it.

What's Rolo Swallow is this is our biggest risk of them passing away. I mean, if they are aspirating, this is risk. And this isn't just her stroke patients hypoxic brain injury, cerebral palsy.

Chamber Types, Safety, and Misconceptions

And there's so many situations where swallow is so important. So that's a huge aspect. So we're talking about, you know, traumatic brain injuries. But we may even want to talk about PTSD or Parkinson's, autism, hypoxic brain injuries.

There's you know, there's a book never leaves my desk. And it's, you know, I had hyperbaric oxygen therapy for neurologic disorders. I gotta tell you, this.

And this is from Ms.. You know, it's great research in there. And, hey, I'm constantly referring back to it because the the studies they refer to are fantastic.

Everything we do here is based on published data. I don't throw things at the wall to see if they'll stick. And if somebody comes in, they're like, I have this disease process that you've never heard of.

Is hyperbaric, you know, work. And so, you know, if there's not research, I can't tell you. But, hey, let's look at the disease process. Let's look at the pathophysiology.

Let's look at the drugs you take for that disease. You know that drug targets this pathway. Hyperbaric does that same pathway. Yeah. This is the reason hyperbaric may play a role.

And I've got a patient in mind on that one right now. And you know maybe if there's time permitting we can get into it. But I can get long winded. So okay.

So in cases of head trauma such as concussions or TBIs, how soon should somebody start age? But to maximize its health benefits. Oh, referencing that exact same book.

You're right there on the treatment of acute traumatic brain injury. The importance of treating early. I think it's paramount. You know, it reduces or minimizes secondary injury, by ensuring adequate oxygenation.

There's a lot of research going into this. I have to say, right now, there's no consensus on when we should, how early that intervention is. But I would say that most belief, most research on this is early intervention gives us better results.

Yeah. In our facilities, as soon as you can get to our facility, we will treat you. As soon as you release from the

hospital. As soon as you're ambulatory enough.

Although in our facilities, we have multiple chambers. I could fill you in. I put you on a stretcher. We have ventilator ability with every aspect. Because I won't be able to treat everybody we can.

You want to have somebody in a chamber as soon as you can and treat safely in the facility that you're treating, and so that makes a lot of sense for concussions.

We get these athletes in or students or otherwise. I mean, the day of the day after if. Yeah, yeah. And now the field of neurology can be a holdout, doing that.

And I usually ask, what's the pushback? What what's your recommendation? What would you do? This is well, we wait. We wait and see. I'm like, I don't heal by waiting.

This is recruiting for anybody. I want somebody to treat right away to see what we can preserve. Especially if the risk is minimal. And it really is. Yeah.

It makes sense to treat sooner than rather than later. Yes. So, have you seen ball make a difference in neurodegenerative diseases like Alzheimer's or Parkinson's?

And if so, what improvements have you observed? There's another place where I try to steer clear of anecdotal evidence, but it's hard not to with the results that we see.

We see fantastic results for patients with cognitive decline. In Arizona, we definitely have an aging population. We're retirement, you know, centers here, and we treat so many people for Alzheimer's, but also just for prevention of cognitive decline.

So for our patients with with true Alzheimer's dementia, we have seen, across the board changes, which typically again with speech but also with mood, you know, some of that depressive disorder, you know, change.

It's it's it's honestly one of the best things I get to see with my patients is treating patients. There is that level of cognitive decline in our facilities.

We won't treat to, severe cognitive decline. But we do treat, mild to moderate decline regularly. If we're talking about vascular dementia, it's where we want to see the biggest change in. Think about it.

Vascular dementia, not enough blood. So therefore not enough oxygen. What happens when I put somebody in chamber and increase that oxygen significantly?

Day one their results are relatively quick. There really are. And we're growing brand new blood vessels. Now Parkinson's is a little bit different. The number one change we see with our Parkinson's patients, especially based off of published data, is the change in the depressive symptoms.

And so Parkinson's has a certain mask, a face that somebody comes in with. And clinicians get used to seeing this. And we see a change in that, which is fantastic.

Yeah. One of the biggest, causes of death in Parkinson's is suicide. So if we can change depression in these patients, it's it's amazing. Now, these patients, you know, for cognitive decline, you know, they usually see a change probably within that first 20 treatments.

If it's Alzheimer's, we usually do in 40 treatments. Probably with a break, maybe another 40 treatments. This is not a slow change. You spent 70 years getting to this point.

Don't expect we're going to change it 40 days. And then on the preventative side, that's that's hard too. So, you know, we can get into that because I think that's probably what you're about to ask it to is.

Yeah. Yeah. So is is about something that you can that can be used for preventative brain health or is it just for acute and chronic conditions. And so I think it's for, for for a preventative I think it's absolutely something for preventative.

It's hard because how do you quantify prevention. Well you didn't get the disease. You didn't get that. But you know people fall off on prevention all the time.

You know, it's it's hard because we're treating inflammation. And so this is where we should get to the point of maybe we talk about the pervert. The prevention is stopping inflammation.

This new term that we're using regularly, the inflammation, causes this chronic inflammation leads to the accelerating of the aging process. And that aging process can be aging of the brain, aging of the blood vessels, aging of so many different tissues.

So we protect the brain there. This is protecting other tissues as well. If we're growing brand new blood vessels, and if the majority of our tissues, you know, really dependent on a good blood flow, like think of our kidneys, a bag of blood vessels, we can grow brand new blood vessels there.

We should be able to protect their function. If we're talking about, you know, as simple as, you know, just fingertips and toes, you know, eyes. These always areas where we can grow more blood vessels.

We're going to prevent something there. So, you know, it's hard on the preventative side because those patients don't quantify their what the results are.

They don't really know they said oftentimes or they just tell us I can't describe what I'm noticing. I just feel good. And so then we keep those patients on a monthly program at that point.

And, we have a huge number of patients doing that with us now and might just be six treatments a month. And I push them to do those six treatments back to back, back to back. Yes.

Hyperbaric is always consecutive treatments. So the initial 20 treatments is 20 days in a row. The initial 40 is 40 days in a row. If we're doing some sort of maintenance and we're doing, hey, I want you to do three treatments.

Excuse me. It's three treatments in a row. Yeah, or whatever level, but I never I'm told somebody come in one day a week. It will save your time, your energy resources.

Right? Right. So chronic inflammatory conditions like mold illness, Lyme disease and autoimmune disorders are notoriously difficult to treat. How does each pot help in these cases?

I mean, it's it is a loaded question there because they are notoriously hard to treat. And, you know, hyperbaric can play a role. And in each one of these, it's it's kind of break them up.

Let's focus on autoimmune. So autoimmune is your body's attack itself. Inflammation is run amok. That's usually due to a certain cytokine called IL ten.

Hyperbaric has this amazing ability to increase IL ten which is your natural off switch for inflammation. So if I look at something like rheumatoid arthritis and this is I teach the autoimmune track at the International Hyperbaric Association.

So I I've got a lot of research on this. So you know rheumatoid arthritis, if I give you drugs for this, the demands or the biologics, they usually focus on TNF alpha.

But really IL ten. And by increasing that the drugs are very effective. So why don't we try using hyperbaric instead. And I got to tell you, we do better than the drugs.

Based off some of the published studies, I have a study that shows at six and nine months after completing hyperbaric that are patients with rheumatoid arthritis had no progression of the G of the disease.

No, Novartis, no joint destruction at six and nine months, which is better than if you went off a biologic. You're waited for nine months. Right. And these drugs are you want to talk about costly.

We want to talk about, you know, the effects they have or even just. And this disproportionately affects women really, is that these drugs have a huge effect on the endocrine system and reproductive systems.

And now a woman has to make the choice between living in pain or family planning. And it's just not fair in that regard. Hyperbaric shouldn't be used during pregnancy.

However, we have 6 to 9 months after we finish our last treatment that there's a protective effect giving good ability for that family planning should somebody choose to do that.

Can you explain how that supports mitochondrial function and detoxification, especially for patients dealing with mycotoxins? Exposure? Oh yeah. It's it's hard to get way to get away from mold.

It's hard to get mold out of the bodies. No mold likes fat. I'm not talking about the fat we can pinch. You know, this is the fat that surrounds every cell.

It's called your phospholipid bilayer. And so molds can get right into there very easily. And oftentimes if you're using drugs to help, you know, attack those that mold, we're attacking our own cells and that might just come out of that cell and go right into another cell.

So hyperbaric plays the role here by up regulating the mitochondria, giving it more ability. And by doing that it decreases cellular senescence that that cells that are sleeping gets it back into its cell cycle, which means cell turnover gets the end of its cycle.

Programed cell death get out of the way so a younger cell can come in and take over and do its job. And now as that cell turns over, it allows that mode to be excreted along with the cell.

However, these patients need to be on binders. That's one part of the process is hyperbaric. So you know that mitochondrial function is fantastic. But Heisenberg's one part of that puzzle.

Those patients are probably going to be on binders to help, maybe even on antifungal drugs. It's it's hard to treat mold. And it's mold is in our passage.

Medicine I think very are sometimes overlooked. And it's Prof. Beebe because no two people really respond the same. Yeah. Should be in the same environment as my patient, and they are just extremely toxic with the mold and my genetic makeup allows me to tolerate that.

Yeah, yeah. But I might not have the same symptoms people living in the same household.

Neurologic Healing and Brain Injury Recovery

So now it becomes, you know, what's wrong with you? We're living in the same place. There's nothing wrong with me, you know? We're just not responding the same.

So it's hard. But hyperbaric has been fantastic in that regard. But you're going to find that our patients have mold and probably one to another degree because these can go hand in hand.

And there's some of the harder patients to treat. Yeah. Yeah. And which brings me to the next question, which is, you know, Lyme disease is known for its persistence due to biofilm formation and immune system evasion.

So how does each bite address these challenges? So, Lyme, we have to make a distinction, you know, there's active Lyme and there's chronic wine. This is done by looking at or at certain markers, active Lyme.

You still have the spirit in your body. It's still going through process. It's still replicating or otherwise high pressure hyperbaric 100% oxygen will destroy that spirit.

And it's fantastic the results. However, your patient's going to hate you. You're going to have such a significant response. You know they're going to have.

And I always murder this name. Her eccentric hammer reaction hurts her reaction to her looks. Yeah, it's never gotten that word right. But, they're going to be very unhappy with you initially.

You're breaking the proteins perimeter out in their body, their bodies responding. That's what you want in chronic Lyme. It's a different approach. But in both situations, our body is not good at fighting Lyme due to these biofilms.

It it leads to this immune system evasion that you're talking about. And so hyperbaric has done a great job of actually destroying biofilms. It's not in every biofilm that we can talk about different biofilms have different responses.

But we have so many studies showing efficacy in killing bacteria with biofilm production, allowing for better penetration of antibiotics, you know, better outcomes for patients.

So it it really first we killed the biofilm. And then we're also upgrading your immune system supercharge it. So now your body's immune function is there to take over and have a synergistic effect with the antibiotics you may need.

So there's a huge effect for these patients. But again Lyme is hard to treat. It just is. Yeah. So for patients with severe inflammation or chronic illness, how many heart sessions are typically needed before they start to notice improvements?

This is the hardest question of the day. It is the reason this is such a hard question is because no two patients respond the same, or make them so differently, and how we handle oxygen's different.

And it might be from, you know, somebody that grew up at high altitude might be somebody that has a lot of physical activity, a lot carries a lot of muscle mass, or somebody who is sedentary.

So why am I athletes and people that carry a lot of muscle mass or people that used to be athletes respond differently. It's mitochondrial density. And you might have seen this in somebody, if you have somebody that, you know, used to, you know, work out all the time, somebody who was in the fitness industry, and then they go start to workout again and they're this kind of snap right back.

The muscle memories, a real thing that's mitochondrial density. It's like having four engines in your car. Yeah. So I give you the same fuel as I give a professional athlete.

They're more efficient with it. They get better results. Why do I see professional athletes getting such amazing results with mild hyperbaric chambers?

Probably due to their mitochondrial density. So many athletes using them, getting results I'm somewhat surprised about. Yeah. So they're going to need less treatments to get the same results.

My sedentary patient diabetic metabolic syndrome. They might not recognize any change for a long time. It might not fuel that change. So I typically set my first follow up appointment at five treatments.

I expect some change at five treatments, not the change you're looking for. I expect to sleep with everybody, and somebody at this point in the consultation always says, this sleep's not my biggest issue.

I said, yeah, it's not mine either. When I treat regularly, my sleep's better. It's better. The oral brain tells me it's better. I notice it's better, as one of the main reasons I actually continue to treat as much as I do is how much better I feel overall.

And it's I know it's the issue. Then the next point is I see a change in pain. It's easy to to change pain with as a Cox two inhibitor, the same thing as ibuprofen.

And typically we see this oftentimes in major joint capsules shoulders hips knees easy places to get into. And the research shows us that as well because look at scuba diving.

Look at what happened to my patient that was underwater too long. They got the bends were hyperbaric. All came from shoulders, hips, knees. Major joints first bothered them.

It tells us that it's easier to dissolve the gas into these these areas. Or maybe it mobilizes better to these areas. But that's where we see a change.

So you know other changes. You know, they might take ten, 20, 30, 40 treatments. And some patients you maybe if my patients do autism, I might not see some of those changes until we stop treatment for a little bit of time.

But autism oftentimes 30 and 40 treatments is where we start to see some of the first real change. Sometimes other ones. We see it early, but it's what we have.

Our patients try to keep notes, keep a journal. We give every now hyperbaric journal they take in every time, write something every time, and we sit down.

I just have our chart notes. My, my, you know, text notes or otherwise to go off or I have their words and, and that way I also can ask them to share their hyperbaric story sometimes as well.

It's something we now have in every patient do is post something in the front of the books. We have a large library here. It's not. Now you can see behind me.

That's my library outside this door is about five times the size of books, and they share their story right in there so they can read about what somebody else saw and how many treatments it took them to see that change.

Oh that's great. That's a great idea. Yeah, it's a fun idea. So what are the safety considerations for each board? And are there any contraindications for certain patient populations.

Yeah. So, you know, hyperbaric is actually one of the safest treatments in medicine. It really is. However, there's safety concerns with everything we do.

And so if we clear our patients to a proper history of physical, we're not going to see major events. The biggest concern for every patient is middle ear barrow trauma.

And that's simply mean pressure affecting the eardrum. It doesn't mean we burst their eardrum or cause a perforation. In fact, that's exceedingly rare.

But somebody come out and they're like, oh, here's a little fuller sounds. I'm talk with my hand over my ear. Extremely common, you know. So that's by far the most common.

I want to say 2 to 3% of patients based off of published data. Outside of that, the other insert rates are so minimal. I mean, a little bit of vision change.

It's always transient. If we already have cataracts, we could possibly make them worse. But so most recently we talked about this in this major tragedy, a fire inside of a chamber, something that should never happen.

Yeah. So the reason we use the chambers that we use, we're never going to have this issue in our chambers because they're not considered oxygen enriched environments.

We keep it below a certain percentage, to make sure that a spark is not going to cause a fire. Right? Right. And the turnover of air in there is so fast that we're not worried about oxygen building up or CO2 building up.

Right? Yeah. This is how manufacturers are all switching over to this. You know, the big name manufacturers of the past have now copied this design. And most of these chambers coming out don't have those issues anymore.

What happened there in Michigan? You know, we're not 100% sure, but more than likely simply due to static electricity. You maybe a possibility of a chamber that was was you know, had some issues with it over time.

I can't say I don't think anybody else can at this point.

Preventive Brain Health and Chronic Neurologic Conditions

But so it comes from first clear in your patient patient selection. I wouldn't put a patient in 100% oxygen chamber. They couldn't sit perfectly still.

They could make sure the grounding strap or grounding pad wasn't perfectly on them. You know, the contraindications that we talked about, there actually are a number of contraindications.

However, the vast majority of them are relative contraindications. I'm not gonna get into the entire list because I don't want to scare anybody away, because the reality is that for every contraindication, there's a time and place.

And so we might say, I'm never going to treat a patient with a pneumothorax or a hole in their lung. And you're right, in both of our facilities, we're not going to in the hospital now.

So life and limb saving treatment, of course, we are so for every contraindication now, some of the big ones, if you're on a chemotherapeutic we're going to make it more toxic.

And so we're gonna say that's a contraindication. However I work with a couple of natural cancer centers here in town. They use low dose chemotherapeutic, and they're using about one fifth the dosage of some of the chemotherapeutic that we would say are contraindicated in these.

The same results by putting them in hyperbaric. So we're upregulated making it more toxic by using hyperbaric and using a lower dose. Again. And it's fantastic.

So it's not a contraindication now. So I would say the way you're going to make sure you get safe treatment as a patient is you're going to go to a center that has a position that makes sure they give you a clearance and prescription.

If the center you're looking at it doesn't give a prescription. They're they're not really following the regulations. Hyperbaric is actually technically requires two prescriptions.

It requires a prescription for the oxygen prescription for the chamber. We can buy them in one. But, you know, it's, this is a this is a medical treatment that requires proper clearance.

If they're not requiring prescription, you're probably not in a safe center. They're screwing the basic regulations. And I don't know what to tell you, which is clinics that are ensuring your safety above all else.

Yeah, yeah. How does each part fit into the broader functional medicine approach? And are there complementary therapies that enhance its effectiveness?

Oh, I can't think of a therapy that fits better into the functional or even naturopathic world. Better than hyperbaric. I

mean, we're using oxygen plus pressure.

Yeah, right. It's a foundation for healing. It's like, yeah, a good building, a good foundation is how you build a good house. All of our wellness, you know, that we do for ourselves, comes from building a good foundation.

I brush my teeth every day to make sure I have a good foundation of my health. I, you know, I have my daily exercise, I eat well, I, you know, the fasting that I do.

And so we talk about how do we complement hyperbaric. The research here is probably a little bit lighter, but we can look at what makes sense and what's going to help mitochondrial health.

And if it's going to help with mitochondrial health, hyperbaric should also have an added benefit to that. So there's a lot out there that we use for mitochondrial health.

You know, maybe we're talking about, I don't know, red light therapy. Methylene blue, PMS, I don't have research showing benefit on these things, but it stands to reason.

Now I do all three of those things. You know, I've been taking methylene blue for almost two years. If you told me I had to stop all other supplements, I can always keep one.

It would be the methylene blue. In fact, if you told me methylene blue versus hyperbaric, I. I may have a hard time making a decision at this point. I would, but it's had the most profound effect on my, I think my cognitive faculties.

I leave a conversation, I sit down, I feel like I could write it down like a book these days. So there's. That will never change. Now my toilet is also died so blue at this point it will never go away.

So there's that part too. So, you know, it's I do these things regularly without knowing if there's that enhancement. But we do know hyperbaric does potentiate some things like antibiotics.

Autoimmune, Mold, and Lyme Applications

We know that for sure. Have you seen it. But combined with therapies like ozone ivy nutrition peptide or peptide therapy for synergistic effect. Absolutely. Yeah.

We have referring providers that that are doing these things regularly. This are just take effect is real. Even though I don't have a way to quantify it yet.

Ivy therapy is probably the greatest example. So we talked about at the very beginning, your body's may have mostly water, but we're all walking around relatively dehydrated.

It's the reality of the situation. Yeah. If I give you an extra liter of fluid before getting in the chamber, I have a whole extra liter available of fluid that I can push oxygen into.

There's a point where at some point I can only fit so much gas into a liquid. But by expanding that volume of liquid, I can sit more oxygen. And, step two, that is, the solids that are inside of that IV.

I can drive them deeper into tissue by adding pressure. It's called driving force, you know. So because I teach for International Board of Undersea medicine, I, I teach these concepts regularly.

And there's something I asked, the, the head of our board, Joe Daughtery. So, hey, I really want to do this. This process is part of the training. I want to make hyperbaric pickles.

And he's like, hey, what do you want to do? I want to make pickles in hyperbaric chamber. I'm going to show you how he said, great, I love it. I like the idea.

This is a CME event. Absolutely not. You can do it during lunch. So that's what we do during lunch. We make pickles in hyperbaric chamber. So what we do is if you take an actual cucumber take your solutes.

And this is, you know, just like an IV, I've got em, I've got water. Yes, I've got sugar. I've got other things are going in there. By adding pressure, I force that liquid to, by extension, all those solutes into that tissue with a gas.

Yeah. And it takes us 15 minutes. If you're around here in Arizona to come do it, we'll make a hyperbaric pickle. Okay. Castor. Otherwise, in 15 minutes, we make honestly really good pickles that you would not, is possible.

I'll share the presentation because it's fun. Okay. Yeah, that's that's fun. That sounds really amazing. What advice do you have for someone considering age?

But but feeling hesitant due to cost, time, commitment, or skepticism from conventional practitioners? I love the skeptical patient. The skeptical patient's going to do the research.

They're going to read, they're going to take what I give them and and say, okay, I want to look at the data and understand because they're going to make more informed decisions.

So I try to take cost out the equation. I understand that for everybody out there, they can't this is their life. It's their their ability. But as a good provider, I'm going to give the same, you know, recommendations to a billionaire, to my patient who's on Medicaid because that's good medicine is I'm going to focus on the research.

And I wish I could say I'm going to give all this away for free and do this in that regard. But yeah, hyperbaric has a real cost to it. I think you'll probably see that the cost is actually less than most people think.

If you Google hyperbaric oxygen therapy what it costs, you're going to get a lot of the hospital based costs, you know, to $1,114 per 15 minutes. So if you go to some of these, you know, hospitals in new Jersey, $14,000 a session, if they'll take cash, whereas most centers outside are charging, you know, maybe somewhere in the $200 range.

It's hard to know where you're at. Based off it, you're in here in Arizona, it can be anywhere from, you know, 200 to $350 a treatment. But if we look at that cost versus what the effect is, if we can do something for our patients, the autoimmune disease, this is less of a cost that half the medications, they're taking.

So we're talking about the demands biologics. Those can be tens of thousands of dollars a month. I mean it's just and we can have a similar effect with a short series of treatments.

So what I try to do for our patients here is get them to do a short series, get them to ten treatments. If I need them to do ten treatments, I got them hooked.

And it's kind of a joke there. But but seriously, if we see that change together, then they're going to continue. And so for a lot of our patients, not autoimmune, but for a lot of our patients, we're not talking about maintenance for a lot of patients.

What's upregulate these processes? You know, it's you've got to the point where it's already taken care of like some sensorineural hearing loss. You wake up one day and you can't hear anything, and you come back and we can get 19 to 34 decibel gain with hyperbaric.

I mean, it has fantastic and then never have to come back, right? Yes. It's amazing what we see with that now and come into our facility. Do it. A daily dive is time consuming, right?

But would you have these same questions for somebody that says that I need to go to, brachytherapy? I have to go to radiation every day. I have to go.

Do you know, dialysis every 2 to 3 days? No.

Treatment Frequency, Safety, and Functional Medicine Integration

Yeah, because that's the standard, hyperbaric. You give me a relatively short period of time, give me a month, and you might never see me again and have a just a fantastic change.

The quality of life are based off that. I give patients all the information and, you know, hope that they read it and make informed decisions. Yeah. Well, so where do you see the future of hyperbaric medicine heading and what innovations innovations are on the horizon that excite you the most?

So I'm very involved in, in hyperbaric future because I'm, I'm a member of a lot of these boards. And so as, as a member of Usm's, not on the board, but as a member and teaching for the International Board of Undersea medicine and even medical advisor now to the National Hyperbaric Safety Association.

I have a little insight to what those changes are coming. I mentioned these irritable bowel syndrome, zero mouth disease. I think these are things are going to be on label indications very soon.

However, I believe the majority of the change is going to be coming from the people. I think as more people start to see and talk about and talk about the changes they've seen that they're going to be they're going to be coming to the forefront.

When people know that, you know, if you're sick of this, the system of sick care, you know, you take the standard of more prescriptions and, and, you know, less treatment.

And, you know, just like people take health into more of their own hands, I foresee the future of being incorporating hyperbaric into people's regular wellness routines.

Just like I said, just like brushing your teeth every day, exercising, eating healthy diet, hyperbaric. I could see, you know, coming commonplace in some of these daily routine.

And I really hope for that day, because the more it's out there, the more cost effective it will be, the more research will have and the more accessible it will be.

When people look for centers, it is very hard to find centers. You're in, Houston area Sugarland, is it? Yes, yes. Yeah. And in Houston, I mean, it's a major metropolitan area.

If you talk about real hyper providers in Houston, there's very few, very few. Yeah. I mean, I mean, it's shocking. It's still Phoenix area. We actually have a few more, but major metropolitan areas, you know, it's few.

You talk about going to rural areas. There's, none. There's none. So, yeah, our big push here over the next few years is to try to push more centers. Opening up one of the websites that I push regularly now is H bot Doctor Dawg.

It's a free listing service for all the hyperbaric centers out there. It doesn't charge anybody, and it's where people can find centers around them that have FDA approved and safe equipment, and people can put up their information and then it can be reviewed or otherwise.

I think it pulls in reviews for other places, but I I'm a big believer that people speak with their experiences. Great. That's awesome. Well, thank you so much for your time and all this, expert, information and advice. It's been fantastic.

Really enjoyed it. Great. Well, thank you for giving me the opportunity to talk about hyperbaric. Yeah. Have you ever given that opportunity? I'll be here to talk about it.

So everybody tuned in. You know, I really appreciate you taking the time. I know we spent a lot of time and we've scratched the surface. So have we had a chance to talk about this again?

I'm sure doctor Ward will come up with some topics and we'll dive so deep into it. That would be great. That would be great. Thank you for tuning in to Doctor Talks.

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