Your Journey With Oxygen Therapy To Unlock Longevity Transcript

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Introduction to Hyperbaric Oxygen Therapy

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And we were astounded. We saw amazing both neurological effects as well as significant cognitive effects. really translating to improving day-to-day life or what we call ADL activity of daily life, improving the quality of life of these patients.

This is Dr. Tonks. Welcome to the Fasting and Longevity Summit. I'm your host Dr. David Jockers and today we're talking about how to use hyperbaric oxygen therapy to help rehab your brain and your body and this is some exciting research and the guest is Dr Amir Hadani and Dr Hadini is a senior physician certified neurosurgeon and a hyperbolic physician and Chief Medical Research Officer at the Aviv Clinic Center.

You can find them at avivclinics.com. So it's avi-v-clinex. com. For the past decade, Dr. Hodney has worked alongside Professor Shai Efrati on novel research focused on neurorehabilitation, Neuroplasticity and Physiology, and he's published more than 25 research papers focused on the effects of hyperbaric oxygen therapy.

If you know anybody that has neurodegeneration, that had traumatic brain injury or anything along those lines or is trouble healing in general, this is definitely something to look into.

Aviv Clinics, Avive. dash clinics.com. You guys are going to learn all about the powerful healing benefits of hyperbaric oxygen therapy. So without further ado, let's go into the interview.

Well, Dr. Hadani, great to connect with you here. I've been a huge fan of Hyperbaria Oxygen therapy done it myself, I used to have a clinic where we did mild hyperbolic oxygen, therapy, and we saw really great results with people utilizing that.

And I know you've done so much research on this. And so let's start by just really a big overview of what hyperbaric oxygen therapy is. Sure. Thanks for having me.

So what we're talking about is a medical intervention. Basically, easy speaking, we are talking a chamber built from metal. People go inside of it. close the door, completely sealed, and we compress air inside and increasing the atmospheric pressure to higher than what we're living right now.

Dr. Hadaniu2019s Research Journey

Right now we have one atmosphere. Usually the pressures we are talking about is anywhere between 1.5 to 2 atmospheres, which is like being almost 33 feet underwater.

That's the same pressure that we were feeling. And once you're under that pressure, We're connecting you to a mask and breathing 100% oxygen. So instead of breathing air, which is 21% of oxygen, we're breathing, 100%. And that combination of pressure and oxygen or breathing oxygen under pressure is inducing significant therapy modality.

Yeah. That's a great overview. And how did you get into this? That's an awesome question. So I was doing my training as a residency as an neurosurgeon and one of my, even in PGY one, one my biggest issues was seeing my trauma patients, the ones that we treat, we do acute surgery, saving their lives and then seeing them in follow-ups three months, six months even a year or years after that event.

Those patients still suffer from significant disabilities, whether it's cognitive, motor, emotional, and basically not go

back to their day to day life.

And my mentor from medical school, Shai Friday, was just receiving, being the director of a hyperbaric chamber by complete chance. I reached out, we talked about it and he said he had a couple of traumatic brain injury patients that he saw some interesting results and we said, let's do a randomized control trial.

And we did that, you know, We were both very skeptical coming in from, You know he's a nephrologist, I was neurosurgeon. Both of us very sceptical and We designed this randomized controlled trial, to prove that this is just placebo effect.

And we were astound, we're really, really astounded, you know, comparing them by the treated group to the control group. We saw amazing both neurological effect as well as significant cognitive effects really translating to improving day-to-day life or what we call ADL activity of daily life.

Proving the quality of life of these patients, being able, going back to work. Amazing. So that got me hooked. You know, traumatic brain injury is always the biggest thing for me and why I'm doing this.

Yeah, absolutely. And I think hyperbaric is most well known for its ability to improve people recovering from traumatic, brain injuries, strokes, things like that.

But what, what overall, like what conditions can improve as a whole for utilizing hyperbolic oxygen therapy? Great. So you have, let's divide them, you know, even by history.

so when you think about how Hyperbaric Oxygen 30 started, we're talking about, first of all, diving accidents. That's how it all started. People got the bends, people still get the bend if you do some mistakes on your diving.

Conditions HBOT Can Help Treat

that's the first and foremost use for that. Then, uh, when we talk about therapy for chronic conditions have majorly non-healing wounds. So people who have diabetic wounds or other issues in their periphery wounds, it's really inducing significant healing of those wounds also in that one of the biggest indication is radiation injury.

so we're talking about people. Received radiotherapy for different cancers can have skin issues or gastrointestinal, urological issues, even cognitive issues because of radiotherapy.

So hyperbaric oxygen therapy is actually the only therapy for radionecrosis or radiation injury. And then we have the whole neurological indications. That's kind of what our group has led over the past two decades in research.

Like I said, People can have a severe traumatic brain injury, leading to injuries that require surgery, but also people can suffer from mild traumatic injury and then develop post-concussion syndrome, which is emotional symptoms, cognitive symptoms headaches, and a lot of different symptoms that bother people.

So we know that post concussion can significantly benefit from hyperbaric oxygen therapy. so that's TBI wise. And then the second neurological indication I would like to mention is stroke.

People suffer from different types of strokes, whether it's hemorrhagic strokes or ischemic strokes. So people get the acute intervention in the hospital leading to significant improvement leading, to rehabilitation, but still people remain very, very disabled.

now on different spectrum of injuries. And again, we have led significant research showing that we can improve both neurological symptoms such as motor improvements, as well as cognitive improvements.

What people a lot of times forget that more than 50% of stroke survivors suffer from cognitive issues. whether it's memory, attention, processing speed, more than 50% of them suffer from that.

And we know we are able to improve that and again, bring them back to work and improve quality of life. So those two main indications again of broken TBI.

Next, we've led research in different pain syndromes, so central pain syndrome when our brain causes us to think that we have different pain or causes to process touch and feeling as they're painful.

One of the classic indications is that fibromyalgia. Again, people that feel pain along with sleep issues, emotional symptoms, again, due to a neurological issue.

The problem there is in the brain. We already know that. So again we led a lot of research in fibro-mialgia and saw that This can be significantly improved.

That led us to a whole branch of trauma induced brain injury or what we can call PTSD, eventually post-traumatic stress disorder. We're now leading the second randomized clinical trial, which the result will soon be published.

But again, we're talking about brain injuries that result from a traumatic event and it doesn't have to be military related, as we all know, unfortunately, it can be motor vehicle accident, but it could also be emotional assault or sexual abuse that unfortunately are so common and cause people to suffer from significant injury and stress for the rest of their lives.

So again, the right patient that we are able to help with, we do assessments for, and if we're able help, again the PTSD can be significantly improved with HBOT.

The next indication I would mention is what we doing with aging. Okay, so the 2016 study we led on healthy aging or normal aging. We took patients over the age of 64, which didn't have a significant, you know, event.

They did not have TBI or a stroke or significant cancer or cardiac issue. There were just people over age 64 pretty healthy. And we wanted to see what we were able to produce or induce with hyperbaric oxygen therapy, a specific novel regime protocol.

And, we found we are able the aging process. We are able to improve cognitive function as well as physical function along with actual aging biomarkers.

So we're actually changing the way we age with hyperbaric oxygen therapy. I think those are the main indications we cover diving through wounds, radiation necrosis and the new field that we have for the past couple of decades for neurological indications.

What's unifying everything here, what we're talking about is injuries that are related to hypoxia or low level of oxygen. Different organs that suffer from lack of blood and lack oxygen that causes a wound.

And this is what we do with hyperbaric oxygen therapy. We heal wounds that do not have enough oxygen and blood. It happens with the trauma, whether it's traumatic or stress-related, it happens in stroke, but it also happens, like I said, in aging.

While we age, different vessels in our brain, our kidneys, and our heart are being occluded and we have tiny wounds in all of our organs. So again, the goal of hyperbaric oxygen therapy is to heal wounds, whether they're in your brain or in you heart.

Yeah, yeah, really exciting stuff. And at the cellular level, we know that oxygen is helping improve mitochondrial energy production, which allows the cell to function better and then also helps the cells to detox more effectively as well and just handle overall oxidative stress that it may be encountering.

That's a big part of the mechanism. Now, a lot of people are confused on the difference between it and the importance of the pressure.

Why Pressure Matters in HBOT

So they think, well, if I just have an oxygen tank and I'm breathing in the oxygen, then aren't I getting oxygen? Why do I need to be in? The actual pressurized chamber.

Great question. We have a simple answer for that. That is physics. So there is a physical law called Henry's law that says that you are able to dissolve more gas molecules in a liquid under pressure.

And the best way to understand this law is the Coca-Cola can. Again, I'm not a Coca Cola advocate here, but think about that. So you have a lot of CO2 gas dissolved in the can, the moment you open the cane, you hear that Because now the pressure is released and all the molecule starts to run away.

If you leave that Coca-Cola open for a couple of hours, you'll have a flat Coca Cola. And this is exactly what we do with a hyperbaric acid chamber. We're taking you and making you a Coca Coca cane.

What we're dissolving is oxygen in the liquid of the blood or the plasma. we are dissolvin more and more molecules. The only way you're able to dissolve more molecules of oxygen is with pressure.

So you have to have pressure in order to do that. If you just breathing oxygen without pressure, you not really dissolving significantly more oxygen. You're not getting to the therapeutic effect.

Your in the lower, lower end of dissolvin that and it's just not effective. Yeah, yeah, it's a good explanation there. Now there is HBOT or hyperbaric oxygen hard chambers, and then there's also soft chambers otherwise called mild hyperbolic oxygen therapy.

And from My awareness, you can really only access the hard chambers. Typically, the average person only has access in very specialty clinics and hospitals, right?

And then there's a little bit more, somebody can actually purchase and have at their house a mild hyperbaric oxygen chamber. What is the difference in the dosage and the effectiveness of these two?

Okay, so that's a big talk here. So the salt shells usually do not pressurize more than 1.2, maybe 1,3 atmospheres, but also a lot of them do provide 100% oxygen.

Some do 94, 95, some do regular air and then, or 30% of oxygen, So we're talking about different protocols, but I think, you know, we talk, or we call it mild hyperbaric oxygen therapy.

But we talking low dose, a very, very low-dose of therapy that has never been proven.

Hard Chambers vs Mild Home Chambers

Basically we do not have any clinical study that had been run with that protocol to see what it does. We have a couple of physiological. uh, studies that showed it's much milder, much lower efficacy on different biomarkers, such as stem cells.

It does have some efficacy, but very, very mild. And as for the clinical effect, we simply don't know. Can it heal wounds? Can heal the brain? can it help with traumatic brain injury?

We just don' know cause nobody has done a randomized control trial. Looking at at the efficacy on the physiological level and thinking, can it actually do what we do with high pressure and a hundred percent oxygen?

Probably not. We're talking about a very low dose and probably non-effective one. But I also want to talk about, so that's on that efficacy level, but I want also to want talk the safety level.

You know, we're taking about devices, those are supposed to be medical devices. Most soft shells are not

regulated and we're talking about pressure and oxygen.

And unfortunately, those things can explode. So exactly like you said, we do it in clinics and in hospitals because we have technicians and people that were trained to run those safely.

And if you don't do that safely, you can end up with a significant injury or in most cases, actual death. Because when this explodes and that person is there, it's not going to end well for anyone.

And those are the devices that explode and cause issues. So on the safety level, I really do not recommend anyone to putting it in their homes. Like you wouldn't put an MRI machine in your home garage.

Cause these things are dangerous and can harm you. It's not, you know, there are different companies that sell them and tell you everything's going to be fine, but it's like selling you an MRI and telling you, everything is going fine.

Its safety and efficacy. People should not use those devices. Oh, interesting. And so how do people access the hard chambers? Do they have to have a specific diagnosis?

What if they're looking to do it for the aging benefits like you were talking about? what is the accessibility at this point? Good question. So there are a lot of different clinics and hospitals running them.

Most of them do not do neurological indications. Unfortunately, it's something that we're trying to change. Now, I will say that it's not for everyone.

I think the biggest issue we have with hyperbaric oxygen therapy is that people think that, it can cure everything. No, definitely not. We need to have a very specific patient selection mechanism.

And this is what we do here in Aviv. I'm the chief medical officer of Avive and our process starts with assessments. We run the patients for three or four days, cognitive assessments, physical assessments and most importantly, brain imaging.

we Do MRI imaging, we'll do spec imaging and we see what's going on in the brain and can we help it? If it's not something that we can predict any benefit, We shouldn't treat it.

If the symptoms or the signs are not correlating with what we see in the brain with those non-healing wounds of the brains, if they do not correlate, we do no treat.

We shouldn't offer it, yeah, what the heck, do it. It doesn't do any harm. No, it's a medical intervention and we should treat it as that. And we treat patients that have specific indications and can benefit from that Like you wouldn't go for any surgery if you're not indicated for that.

Patient Selection and Clinic Access

That's exactly how you should deal with it. So you. You should go to a clinic that does assessments that include brain imaging and make sure that you would benefit from that if.

If you don't do that process, don' do it so AV clinics that we're running is what we doing right now here in central Florida. do the assessments and then we decide which type of treatment, which protocol you're gonna get that we have shown in a randomized controlled trial based on your brain imaging that you should benefit from.

Very interesting. And how many of clinics do you guys have at this point? So right now we three clinics. We have the Central Florida one, the Asia one in Dubai in the United Emirates and in Israel.

Okay, excellent. So you guys can look up, it's just Aviv Clinics and check out the assessment. And what are the treatment protocols look like? Like how often is somebody using it?

What is the time length typically that they're in the chamber? Great question. So definitely it depends on which indication we're talking about. We didn't have time to talk about, sometimes there are acute indications such as carbon monoxide or compromised flap that people can suffer from different plastic surgeries.

It really depends, but if we are talking the neurological indications, such a stroke, a TBI, pain syndrome or an aging process, we usually talk three months of therapy, 12 weeks.

On each week, we're talking about daily sessions. So five sessions a week. And each time, each day, We're talked about two hours in the chamber. We use multi-place.

Would not use a hard shell chamber, like you mentioned, which is a monoplace that only for one person. Talking about a very big chamber looks like an airplane.

From the inside, we talked about 14 people sitting together at once, up to 14 obviously. Each person has their own chair, their on tablet and they sit there and time.

So usually 60 sessions for 12 weeks, five days a week, two hours and a specific protocol that we do here.

Treatment Protocols and Cognitive Training

Well, that's really interesting. So you got 14 people in there and they're just kind of sitting there on their tablets. They don't have to kind lie, and you know, they can sleep if they want, but they are able to obviously do their kind daily activities or just they have internet access, things like that.

But I also want to mention one of the key things that we do here with Aviv, we also combine for specific patients Cognitive training. So patients can actually do different exercise cognitive exercise while they're in the chamber.

And the reason for that is synergistic effect. We know cognitive training has some benefit from it. we know our hyperbaric protocol has benefit. so we combine the two for specific patients and we give specific exercise or specific indication for a specific cognitive domain.

personalized for that patient to do while he's in the chamber. He doesn't do it for the entire time of the two hours, but for this specific amount of time we want them to every day or the other day.

I love that you're stacking those different therapies and can obviously get better benefits that way. So really, really great stuff Amir and people can reach out to Aviv clinics to learn more about this.

And where do you see hyperbaric medicine? Obviously you are on the forefront of this seeing patients and also doing research. Where do see this going in the future?

Are there any other promising conditions that hyperbolic oxygen will be approved for that? You foresee in future. Yeah, so definitely that's our goal, that is our life goal.

First of all, I want to have all the indications that we discussed FDA approved. So we are working on significant trials to get them approved and to be much more available everywhere for survivors of those conditions.

Future Uses and Alzheimeru2019s Research

But also we are also working on cognitive decline due to other pathologies. And obviously the biggest one is Alzheimer's. We have a couple of Alzheimer disease studies running currently.

we don't know the results yet, but that's definitely the direction we're talking about.we are exploring different indications. We haven't even talked about the athletic performance that we also utilizing oxygen to improve physical performance of athletes.

So definitely, I think in this decade, we'll see hyperbaric oxygen therapy being more and more utilized for different indications, much more available.

And again, if used smartly and correctly on the right people, this will be a significant portion for a lot of people. Wonderful. Well, thanks so much for your time and the great research and work that you're doing, Amir.

Really, really exciting to hear about the results that guys are getting and how people are utilizing this sort of therapy. And again, thank you so for time, and your great work.

Guys, we'll see you on a future interview. Be blessed, everybody. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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