Introduction to Hydrogen Therapy

Hello and welcome back to the Reversing Alzheimer's Summit. I'm one of your host, James Maskell. And with Doctor Robert Love and my doctor, Christine Burke.

We are tapping into wisdom about Alzheimer's, reversing cognitive decline and what it takes to live a long and healthy life. And today, we're going to be talking about a very interesting segment of the conversation, which is about hydrogen therapy.

And I'm super excited to have, Ben to matter here to take us through. This is an area where there's a lot of emerging interest. We've had a lot of people ask about this topic.

So who better than Ben to jump into it? So, Ben. We'll get into the story, you know, as we move along. But just maybe just first and foremost, what is hydrogen therapy and and what's the goal here?

Right, right. Yeah. First. Thanks for having me today. I'm glad to be a part of this. And, you sponsor doctor, talk to you, but. Yeah, my name is Ben to, I'm from.

My company's name is H2 Biohacker. You know, to biohacker h2 biohacker.com. And. Yeah. So I'm gonna give brief introduction as to what it's all about, then get into the stories and some other interesting stuff.

So, basically hydrogen therapy is starting to get a little bit more known out there. You know, back when I first started into it, it's like no one had heard about it so completely new.

It was like something out of the out of the blue just comes up into people's, perspective with health. But anyways, hydro therapy is the administration of hydrogen gas into the body through inhalation or drinking hydrogen infused water, or by diffusing it through the skin for the purpose of faster healing and a better overall health.

Nice. I've definitely heard about that. Yeah. And so, so how exactly do we administer it? And one of those ways is, like I said, good example here, but the machine produces hydrogen.

We'll do it. Air stone. We bubble into water, infuse into water, and then drink the water. Hydrogen doesn't stay, you know, contained for very long. It diffuses very quickly into the environment.

So, you know, you want to drink this, you know, pretty quickly after it's been treated. The other way, the most important way I find most potent way is through a nasal cannula.

You're familiar with these, right? Yeah, I mean, everyone's. But for the people that people that are not familiar with needle cannulas, you know, you loop around your ears, the machine produces a gas, sits right under your nose.

It's very unobtrusive. No smells, no odors notice. And it's easier than taking vitamins, I find, to get a treatment. And then the, the third way we use a lot is, for treating joints.

And that's by bagging your hand, your shoulder with a sleeve or your elbow or knees are very common problems in a, you know, foot feed as well. You bag in the feet.

So those are the three methods, and it's a little visual of how it's done. So that's what it's all about. The machine produces the gas and we, you know, distribute through the body in different, with different means there.

And so I mean, a little bit of the story now.

How Hydrogen Is Delivered

So I'm not a doctor, I come so I come from an angle from a very different perspective. I've got a degree in electrical engineering, and as a scientist and engineering research, I mean, I, I'm looking for better health, you know, and, longevity type, subjects interactions.

And so I come from an engineering scientist's perspective and, I mean, a natural health enthusiast for over 30 years now. So, yeah, to talk about how I got into this health as well is, you know, my goal initially was as you start to age, you start getting all these aches and pains and weird stuff.

Your eyes and just your joints and stuff. You feel your body start to, you know, wear down and, you know, being being semi-retired. It's like once you retire, you start, your body's about to collapse and you get a less bobbles like you will.

How do we preserve our health? Spend as long as possible. So the goal was to increase my health span, quality of life. And those problems we start, to feel as we age, like the lack of energy fatigue, cognitive decline.

We're more susceptible to sickness and various age related, you know, health conditions. So, I mean, the goal is like, what? What am I looking for? What are we look, everyone is looking for in general health, right?

Their overall health, more energy, strength, better sleep, a sharper mind, faster healing. If we do, you know, end up getting sick, they're not going to get sick at all.

Right. But just reduce aches and pains and more mobility and just overall feeling youthful, you know. So so that's the end goal. And so, with my extra time, I started studying anti-aging.

And those were my, you know, you know, goals in research. And so as I dug deeper into it, I was involved in some, private longevity groups and forums where we shared and discussed the latest research on supplements and biohacking, and anti-aging and, you know, several years ago, there was one supplement that came across, you know, our desk and we were experimenting with was called carbon 60 or C60.

Are you familiar with that old James Bond? I'm familiar. Right? Yeah. So, so this was back before it became known as a something people were taking it. I mean, I was in a group.

We were actually making it ourselves. Do you take in the car in 60 or 60? 60,000 dissolved into, olive oil for two weeks and taking that and then, we noticed it did have benefits.

It worked. You know, we started feeling some of the effects. It's like the more usefulness, more energy, just better cognitive abilities and stuff. And what's strange about the C60 molecule, it's very stable.

It's a inert molecule. It doesn't react with anything. And so, like, why is it providing the benefits? It does. It's like a vitamin or amino acid that has a purpose in the body.

And so I say as a scientist engineer, I'm like, well, what is the working mechanism with everything? Like why, why and how is that working? So as I dug more into the science, as to why it's working, we're feeling these benefits that led me to realize that C60 is actually is power is derived by acting as a transport agent or mechanism for hydrogen.

And it was actually the hydrogen that is the working mechanism behind produce producing the results we're experiencing. I found studies where the carbon 60 is like a steer study.

So I mean, unless you are really searching for these specific, you know, cases you wouldn't know in person wouldn't happen to running for awesome. But, there are studies, where they're doing, experiments in hydrogen storage for potential hydrogen cars with different, different molecules.

Ben's Background and Discovery of Hydrogen

And they found that the carbon 60, as opposed to carbon 70, 80, in different varieties, so that we're able to hold on to hydrogen just just tight enough to be able to release it when needed and then hold on to it and when it was in a different state.

And so those papers, as well as other experiments, obviously led me to leave. And I mean, really understand that that's what's going on in the body. And so it's the C60 was just acting as a transport mechanism for the hydrogen.

And so at that point with that realization, I said, well, let's you know, cut to the chase and just focus on hydrogen. And that's where all these benefits are coming from.

And so at that point, you know, hydrogen was starting to get to be known. And in some circles, especially in Asia, where we first became popular in the treatment of, you know, certain conditions with hydrogen.

And there were some hydrogen bubble bottles out there, and we just infused small bottles and small bubbles of hydrate into the water. And so, I got one of those like, oh, this is it.

You know, I'm going to I'm going to get all these benefits just by this little bottle, but and no, no results, no benefits whatsoever. This didn't had no effect.

I mean, I did it for a while, and it's like I was disappointed, like, man, this is something's up. Something's up with this, you know, there's also tablets, you know, you put in water, but you really feel the effects need to multiple tablets in a day and you start to get really expensive as well.

But, and then there's also, some companies in Asia doing experience with inhalation. I said, well, that's got to be the inhalation. You know, we just not get enough hydro. Maybe there's a critical dose.

And so as an engineer, I was always already running my car partially on hydrogen. So I knew the process of electrolysis for using electricity to break up water molecule into hydrogen and oxygen.

And so I was just I'll just build my own machine rather than buy one of these crazy expensive machines at the time. And so once I built my machine, you know, adjusted it for the volume of gas that's, you know, you know, good for the body and also necessary.

And then finally, I started feeling the real results, you know, much better than the carbon 60. It much easier, much quicker, because, as you can imagine, like, if you diffusing any hydrogen into a liter of water, you there's no volume, there's no space to diffuse a liter of gas into a liter of water.

It's just not there. But in experiments that I've done and just, you know, my own personal trials and, working with clients, we found that, a liter per minute roundabout of total gas, you know, maybe like, it's about six, 600ml of hydrogen, is what they get.

This is what the machines produce that we work with now. And so, you can't say a liter of gas into a liter of water. It's just physically impossible. And if we're getting a liter of gas per minute, it's like a factor of over a thousand times more hydrogen.

You get into the body. So yeah, there's a there's a threshold or, critical threshold or minimum dose to really receive the full benefits and potential that hydrogen has to offer.

So that's interesting. So, so you've done a lot of experiments on, getting the hydrogen in. What have you learned about what's happening in the body, and why does the body react positively to hydrogen?

Right, right. Yeah. And so, as I start sharing my results, you know, that kind of put us into business, you know, friends and family and we start sharing, and we just kind of grew organically.

But yeah. So some of the, results. But but before I get into that, we need to connect to one of the question

becomes what? How is hydrogen? What is the connection between hydrogen in the body, you know, is why is hydrogen here?

In fact, like we know carbon 60 is doesn't really have much biological value. But what's the connection between hydrogen in the body? And so, it turns out that hydrogen is naturally produced in the gut, with a good microbiome, in a quantity as much as 12l a day.

You know, some say six liters, but as much as 12l of de volume of gas is produced with the good microbiome, you know, in your intestines. And most people nowadays are at a disadvantage because they have such an unhealthy eating, unhealthy diets.

And so in that, in that case, you can think of hydrogen as a supplement. And so now getting into more of the benefits, but, what we were experiencing, me, friends, family, associates who are using it and what the science says, they, they, they jive, you know, so they're both cooperating from both sides, which is great to see as an engineer and scientist.

So you as you do your research. But, one of the first things you notice is, usually an increase in energy, you know, which correlates with better, better metabolism and how the hydrogen interacts with the mitochondria on a, I mean, most basic cellular level, inside the mitochondria, where the ATP molecule is produced, you know, the energy molecule, energy currency of the cells, at the most basic level, that that hydrogen, which is the proton, an electron, the mitochondria are basically separate cells, creates creates a voltage or potential, differentiate the differential in the beginning.

And as ATP molecule pops out at the end of this, you know, Krebs cycle, it recombines the electron and proton, you know, in in the form of hydrogen. So at the most basic level, hydrogen is involved in the mitochondria.

And then another reason, which is super interesting I found is, I started to question whether hydrogen can be directly metabolized by the mitochondria because we were just, just drinking hydro infused water, just breathing. And there was an increase in energy.

It's like, so what's going on? And I did find another obscure paper was super technical terms. I could share this with you in the audience if you if you ask.

Why Hydrogen Works in the Body

But, there is a, a, a pathway actually for mitochondria to directly use mitochondria in forms of metabolism to produce 88 ATP molecule, which is not talked about in, you know, regular, science, which I found super interesting, which also corroborate some of what we were, you know, seems like how is it happening?

How is it producing this, additional energy, what we're feeling, but not just the energy, but, it also is, a selective antioxidant. You know, it helps with the rest.

The, reactive oxygen species that are resulting from partial metabolism or bad metabolism. If those reactive oxygen species are reduced properly after, you know, different metabolic processes in the body, those, reactive molecules hanging around, you know, will react with other molecules, you don't want it to react in your body, you know, for example, DNA.

And so all those, free radicals in your body, if they're not neutralized quickly and properly, which with hydrogen does help with it, then it leads to inflammation.

And so which is another really good hallmark of or result of hydrogen therapies is a remarkably reduced inflammation across the board in all kinds of inflammatory diseases.

So again, like we're seeing, you know, in, in practice in what we're seeing from the research, they are corroborating, you know, we're seeing inflammatory conditions, you know, improve, you know, so arthritis, any

inflammatory conditions, the conditions get better.

We see that and we can see on a molecular level how the hydrogen is, you know, reducing molecules or reacting with, reactive oxygen species in a way that reduces inflammation.

Yeah. That's, so, you obviously we're, like, at the the forefront of this and working it out yourself and trying to work out how to get it in and and now seeing it, you know, since you've done that, has, has the research caught up with other other people looking into this and, and what are they finding as you go from serving animals?

One experience to now, you know, broader research, right? Right. Yeah, I think there was a original article in 2007 that kind of, you know, started the ball moving with these in this a lot of animal studies from then on.

And a lot of studies were more you know, they started with, hydrogen infused water just because it's easier. And so the inhalation part of it has lagged.

And I was doing some more, you know, research recently, but a lot of the inhalation studies have started to catch up with the hydrogen water studies. And now we're starting to see more of that.

And it makes sense because we kind of jump that, you know, you know, me and my associates, you know, right into the inhalation. And what we were seeing there were I couldn't find any information out there.

So it was kind of new, you know, but now the research and studies are starting to catch up with that. Another thing that was interesting that I haven't seen anyone do, but we were, I mean, doing some early just I was really curious as an engineering scientist, but, we noticed that improved a dramatic improvement in circulation.

And so anyone would like, you know, even, like, numbness in the hands, cold feet, cold toes or, conditions that, you know, you know, you result in a bad circulation, for whatever reason, were improved dramatically.

Even after breathing for, say, a half hour, you can notice your skin is a little bit more flush, you know, and you look at yourself in the mirror after just starting the hydrogen therapies and like, you're a little bit more rosy, a pinkish skin, which means your capillaries would be being more, you know, filled with blood.

And so, when I suspected that something was going on, I got a near-full capillary microscope. You can look at the the Coppola areas and what's going on their lives.

You know, in the blood cells, you can you can see the little blood passing in your capillaries. And so, doing that, I was able to look at lots of people's fingernails, you know, before and after and during a session.

And it was incredible because, there's a whole theory on diagnosing different diseases by just looking at the capillaries, you know, in your fingernails right there.

But, what I saw was like in some people had like, you know, almost like little micro clots in there. It's like you can see like cells, blood cells, just, you know, stuck in there.

They weren't really moving. And then within ten to 20s of inhalation, I mean, that's how fast it diffuses into your lungs, lungs, in your bloodstream.

You can see the little cells and your capillaries start to move in. They all start to like, you know, pick up and speed and then more and more and more passing.

And then comparing mine to my ten year old son, my cat after me for years, my capillaries looked like this. I mean, bright red, very well formed in other people that were starting to have degenerative diseases.

You can see an obvious difference in the way the camera is look. But what it's incredible to see for me is the scientists are like, say, I want to see something working. You know, I want to see something real.

But to actually witness the circulation improvement in your fingernails was incredible. That's so cool. Well, so you've seen quite a lot of that starting to happen.

Now, let's talk about cognitive decline and Alzheimer's and brain health. Like, where's the research on that? What are you seeing? And why do you think this is important conversation for the people listening to this event?

Yeah, yeah, I'll tell you that. Yeah. Hydrogen is also known to have neuroprotective benefits. You know, in some cases, neuro neurogenic, you know, benefits where it, helps generate neurons, but it helps in all form of, neuro, you know, degenerative diseases.

Research on Brain Health and Alzheimer's

You know, we can see it because one of the first things we know is to is like, your mind is sharper. It's going because it easily passes the blood brain barrier.

It goes right up into your brain. And you one of the, the one of the noticeable improvements is, brain fog. A much clearer mind, more productive, like, if you're working on a computer, better sleep.

And what some people, you know, find almost like sort of surprising or scary, but like, man, I'm having more vivid dreams. It's like so many colors, more lucid, you know, it's like, you know, it's kind of like what's going on.

It's like it makes you more normal. You're supposed to be dreaming and have vivid dreams. That's part of your normal body process. But if your neurons and brains are not firing properly, you're, you're you're dumbed down on those.

And so it's one of my early issues was brain fog. And that's like, you know, gone now. So it will take me so long to like, get moving in the morning. Sometimes I would need naps.

Now they just plug into the hydrogen and it's like, a boost, you know? So brain fog disappear, you know, disappears. I had, you know, neuropathy and problems, you know, with, like, numbness in my leg at one point, but that's like a long gone, and so, and there's a lot of studies corroborate how it is neuroprotective, in we can regenerate neurons in some cases.

And that's where a lot of these diseases come in. As you get older, especially like autoimmune disease, which attack, your, your neurons as well, like, like with, Ms..

That type of thing. And with diffusing the, the gas into your skin, especially your joints helping with the inflammation. And also just it just starts healing to the point where a few overnight treatments stimulates the circulation in whatever's going on.

And so just basically through overnight treatments, I've cured my, like a torn rotator cuff pain there. Plantar fasciitis in my foot, 20 years of pain and just bagging the foot.

You know, whatever's going on there, the neurons, the pains, it's it's works to make it, you know, go away. But, yeah, you can jump into some studies and then you can go into more questions if you have them.

Sounds good. Yeah. Tell us, what else we got. Yeah, yeah. So it's a really tight end to Alzheimer's. You know, I did some quick searches before this on to, to really give some examples, but there's a publication called pharmaceuticals.

And you can look at this online too with a quick, you know, search. I'm sure you'll be able to find the same thing. But in pharmaceuticals. A 2020 3rd March article, the title is Therapeutic Inhalation of Hydrogen Gas for Alzheimer's Disease patients and subsequent long term follow up as a disease modifying treatment and open lab pilot study.

Super long title is That's What They Do. But, to summarize it, the conclusion they basically come up with and summarize as well that inhalation of hydrogen result in a marked improvement or in marked improvements as assessed by, I guess, this, you know, cognitive tests, what they call a Adas, dash, cog and, DTI there, I guess cognitive test that they use to determine the, the quality or the progression of Alzheimer's.

Right. And so that the inhalation not only improved, temporary relief, but also maintain the effect for at least six months after, you know, being without the hydrogen.

And so at the end of the study, they say, we propose that hydrogen inhalation is a candidate for the disease modifying treatment of Alzheimer's. And, as the effects of inhalation, hydrogen inhalation are striking.

And so that was one study. Another one here comes up in, biomedicine and from a, from from of therapy, pharmacological therapy. Would you say that we're right.

This is in December 2023. So about two years ago as well, in the title of this article is the role of Hydrogen Therapy in Alzheimer's Disease Management insights into mechanisms, administration routes, and Future Challenges.

And so the highlights of this article, say that hydrogen therapies may manage Alzheimer's, easing symptoms and slowing progression. It helps manage energy regulation and prevents neurological damage.

That hydrogen therapies low side effects make it a complement to other, Alzheimer's treatments and therapies. Wow. Okay. Good stuff in it. And there's one last one I want to mention.

Then we can go into other stuff or, you know, wind down. But, there's another article that I found in, h two times it says the results of a clinical study in 2023 showed that after six months of molecular hydrogen inhalation, patients experience improved cognitive function and neural quality.

Even one year after the treatment, improvements persisted long after the end of the treatments. And that mechanisms of action include selective neutralization of hydroxyl radicals.

We're talking about before, like, you know, reducing rates. Right. In this and it goes into saying that as well as like reduction of oxidative stress and inflammable tary reactions, improvement of mitochondrial function and promotion of neurogenesis, you know, all stuff that we've both seen firsthand and, you know, other studies are corroborating.

So it's all going in the same direction. And we have different, you know, avenues of people coming to some of the same conclusions from different from different story points, like, you know, me, it's it gives more credibility to the whole theme that hydrogen is good and there are results to be had.

And so in this article ends in saying that the fact that the administration of molecular hydrogen is, according to the results of scientific studies, free of side effects, which are otherwise common with conventional drug therapy, is also crucial.

So every any side effects in maximum upside potential, right? So like tell me now. Like what? Like if you're if you're interested in this like and you, you think it could be part of your regime, what is a reasonable way to execute on this.

Like is is it supplements. Is it water. Is it breathing it indirectly. And then for do you have to have like a station at your house. Like how does that look.

Right. Basically, there's we've got a few different machines to, to choose from, but it's basically like, up to like 13in high, 11in wide and eight inches deep.

So something that would sit on the floor or your desktop or counter, we're working on a more portable unit, but, we find that the total gas volume that seems to provide the most benefit is about one liter per minute.

And because the machines they break up, the water molecule into hydrogen oxygen, you're getting two thirds hydrogen gas and one third oxygen gas. You know, there's a little bit of benefit to getting additional oxygen gas.

So breathing them together, it makes sense. And so the machines are semi portable. You can move them from one room to another. But the way I usually I, I sometimes breathe overnight.

I hook up to the cannula as I'm going to sleep angry for a few hours and sometimes for, you know, sometimes I'll go eight hours breathing all night if I'm really like, feel like I need to be recharged or sometimes just in the morning.

But we find that, for example, a Parkinson's patient who's, when a patient better or she's treated her mother for Parkinson's disease, they're usually for one hour in the morning.

And when they've increased from just one hour treatment per day to three hours treatment per day, they noticed an additional improvement.

Practical Use, Safety, and Getting Started

And so it's good to have this at home in a way where it's convenient to use, infrequently. In this particular client said that her mother began to do household chores, that she had stopped doing months ago for them, just like, just making her bed.

All of a sudden, she started making her bed, and she wasn't capable of doing that before and helping out more in the kitchen. And just working with someone that has Alzheimer's or Parkinson's.

You you have, a sense of what they're capable of doing. You can watch their decline, and then when all of a sudden they start these treatments in their, their cognitive abilities improve, their memory starts improving, and they get more mobile and functional.

You it's obvious there's there's a difference. You know, there. And we've and by this time we've talked to so many clients and we've got a lot of different.

So one of the benefits that we bring is, you know, we offer new free consultations. We call a hydrogen discovery call where people can sign up on our website for a free 30 minute consultation.

And I could, you know, again, I'm not a doctor. I always consult your doctor, but I can only share my own experience and my clients experiences and can let new clients know what to expect, you know, and and what time frame and how to use it or to adjust protocols.

And, and sometimes we've got to lessen, the quantity of hiring. Sometimes we going to raise it and, you know, just that the timing also affects it. And, and how you administer affects it.

And so we've dealt with that over the last few years and working with hundreds, if not a thousand clients to get a lot of feedback. That handholding is what we do to help, you know, so some, some therapies and modalities are kind of scary for people.

First get into it. But this is, I mean, easier than making coffee. And it is I found it easier than taking vitamins. And the easier it is, the more people are able to use it.

And the received the benefits. Cool. That's really cool. So and then you know, from people that you spoke to, let's say they get on the discovery call and you speak to them and then they decide they're going to start doing this.

When they tell their doctor that they're going to start doing this. Well, what does what does the average doctor know about it? Do they try and discourage them or are they feeling pretty good about it?

That's a whole range of reactions right there. Like for example, one thing to consider is that, you know, clients that

have been on like, blood thinners, you know, it's like within a day or two, they have to reduce the amount of blood thinners because your blood goes back to its natural state because it, it charges the blood in a way that has more negative ions or electrons.

You know, blood cells are meant to be negatively charged, so they bounce off each other and so it prevents micro clotting. So working with your doctor, if you're on blood thinners, you have to let the doctor know that, hey, I'm on blood thinners.

You know, I'm I'm sorry. I want to do this hydrogen therapy. But, you know, I need to work with you on a test. And some doctors may scare the patient into thinking, oh, that's bad for you.

You don't want to try that just because the doctors uneducated. So that's a little bit of a challenge sometimes if the doctor is not open to working with the patient on this.

But but in if the doctor if this cases where, you know, patients have weaning or clients have wean themselves off of, you know, drugs in say, blood thinners, for example, by monitoring their their blood work and working with the doctor.

And so it really depends on the doctor. By the time they contact me looking for alternative treatments, they're already open to something new and different.

And they already are working with like, a natural path or a functional medicine type doctor. Right. And so they're already thinking in a different path and it's those type of doctors which, you know, or are or more open to working with patients on that level and to find alternate solutions like a little bit out of the mainstream that are very, invasive, nontoxic, you know, very, non problematic and were just more natural to the body, but that the benefits super outweigh any, if any, risk at all.

Beautiful. Cool man. Always the best place to get in touch if people want to learn more ways that when they got. Yeah a website again is H2 biohacker.com that's you know the letter H the number two and biohacker.com.

There you can sign up for a free discovery call to learn more. And it can go more into detail and address some more specific, you know, questions and topics there.

Another thing I'd like to mention is that we do have a special discount. We're offering to doctor talks, you know, attendees. And so, if you're ready to purchase, you can go there online and into the discount code, which is doctor talks, the same as their domain name.

Dr., Lcsw. And you'll get a nice big discount there. So yeah, that's pretty much it. You know, you can visit our website and we can talk more and get more into details and share a lot more.

We've got we've built up a large knowledge base and a lot of testimonials. Great. Well, thanks so much for being part of the summit. I think that's a nice adjunct, solution and look forward to seeing, what else we can do?

To, to get people engaged. Right. Thanks for your time. You're. James. Thank you. All right. We are going to have so many more great sessions over the next few days here at the, Reversing Alzheimer's Summit.

Make sure to check out what's happening the rest of today and tomorrow. This has been a session on hydrogen. And thanks so much for tuning in.