Introduction and Ben Greenfieldu2019s background

Hello. Welcome to the bio optimized summit where we are exploring the next level of physical and mental health you can achieve through targeted and intentional optimization. I am your host, Dr AMY and today I have with me, none other than Ben Greenfield who is out on a walk in Washington state And he is joining us to talk about NAD.

Today. Ben Greenfield hardly needs any introduction of course. He is a human performance consultant and speaker, New York Times, best selling author of 13 books now, including the popular titles beyond training and boundless.

He is a former collegiate tennis, water polo, volleyball player, body builder and 13 time Ironman triathlete professional obstacle course racer and has been voted by the N. S. C. A. As America's top personal trainer and by greatest as one of the top 100 most influential people in health and fitness and why people love him and follow him is that he's tracking so much of his own health.

So he's getting objective data and then sharing that with others so that they can optimize their own health or own living as well, whether they are a ceo or athlete or a soccer mom. And so I am welcoming Ben to the summer today, Ben, thank you so much for joining us.

Yeah, so Ben and I have met a few times, we are both in the mind share community and last year at the mindshare community. Uh the conference had just started of course and so they turn all the lights off and here walks in Ben and and I had seen his marker for his place where to sit in the seat uh somewhat close to mine.

And here comes Ben. And of course Ben is such a person who's very in the moment and without talking with everybody connecting and doing doing what he loves to do and he's coming in, he's feeling very lost.

And so that was my first introduction to Ben, helping him find his seat. And then he came to my clinic, the N. A. D. Treatment center in California for some N.

A. D. So Ben, that's what I'd love to talk to you about today, is this N. A. D. And this is just an amazing an amazing supplement therapy treatment. So what are the reasons that made you want to try N. A. D. What are the benefits, what are the health benefits that you wanted in your life?

Well I think you've already established that I went and did N. A. D. Because I got lost. I had to find my way um apparently had to work on my way finding skills and uh no in all seriousness, actually trying an intervention venus infusion of N A.

Why Ben started NAD and early results

D. Myself, kind of a traditional, I believe it was, you know, 1000 1200 mg around, they're just doing kind of a three hour I. V. Sit with it. And um and and just the the acute results were absolutely amazing in terms of clear headedness and energy and surprisingly, you know, one of the things that really shocked me was I started to get by on really busy days without much sleep which was kind of kind of a cool idea for me.

So I started to look into this uh this compound even more and uh as I increasingly did so I I began to use it myself. Um not only intravenously on about uh about every month to every two months or so but I also began to to orally administer some variants of it to kind of see how I felt with nicotine amid riverside or an R.

And then also uh sublingual N. M. N. Um Since then I've I've experimented a little bit with intra nasal delivery of of N. A. D. Sometimes N. A. D. Compounded with with CBD um experimented with with combining it with really what I would consider to be kind of the the uh the turkey and cranberries of of anti aging and longevity which would be

any sir to in rich compound like resveratrol or or terrorist still being.

And then I've also recently um just because I I actually feel this really acutely uh in a in a pretty profound way without the hassle of the I. V. S. Because I began self administering my own push I. V. S for a while and that was very uncomfortable and and a little bit of a hassle um de yeah that would be uncomfortable. Yeah I I don't I don't recommend it but I you know I just wanted to kind of experiment that's that's one of the things I do is just kind of getting pig stuff on myself. But you know what I've kind of settled upon and my my go to right now for any d administration which I think is just about as good as intravenous. Although I would consider intravenous to be top of the totem pole for full body by availability.

I'm using sub Q right now. So I've been doing a sub Q injection of about 200 mg every other day. And um interestingly II time that before a walk in the sunshine like I'm doing right now or before some morning red light therapy like using one of these red light panels because you know, n A D just to back up here for a second is going to be um an electron donor and the electron transport chain and assist with the shuttling of electrons across across that membrane. You know, it also has some other effects such as uh you know the DNA repair mechanisms for example as it as it up regulate some of these some of these certain one proteins that that resveratrol and tara still being some of these other things are gonna be acting on which is why I like to combine it with that.

But you know when when we're talking about up regulating by the condo activity there is kind of a there's there's kind of a slowing down of the process that's gonna occur if another part of the electron transport chain called cytochrome c oxidase is not also up to speed.

So in an ideal scenario, not only do you have any d increasing the activity of some of these certain one enzymes and the shuttling of electrons in the electron transport chain.

But then you also have cytochrome c oxidase working properly.

NAD delivery methods and stacking with light therapy

And the really the best way I know of to target cytochrome c oxidase is red light or infrared light. And so what I do now is I'll stack N A. D. Administration with red light or with sunlight and that's a that's a really cool combo that works just fantastically.

So so for me kind of the gold standards I'll still get like a heavier I. V. Push every every one or two months. And then in between for the longest time I was just keeping my levels topped off with either oral nr oral Mn or or international administration.

But now I'm just doing kind of every other day, a subcutaneous N A. D. Mhm. And that's a great way to maintain the levels in between the IV's I've got an I. V. Going now as I as I told you, you can see that in the background and I do I do my own ivy about once a month and I'll get a total of about 1000 or 1500 mg of N A. D. I. V. Every month.

But then I actually used the patches quite a bit been. Have you been using the patch is much I'm blanking on the on the name of the form of electricity that using the patches.

It's um yeah patches I actually really like those for for airplane flights because we know the profound impact that anybody can have on some of these inflammatory pathways. And so I like to slap one of those on for a flight. That that's generally when I'll use the patch.

Um Again just because I find that I get I get even better feeling in terms of energy levels and what I'm looking for from the N. A. D. Now with subcutaneous administration I'm at home but I'm not gonna walk in the airplane with a bunch of needles.

And so I just uh I just slap a patch on before I fly and that's super convenient. Um You know and of course you know again to back up here I do I wanna make everybody think that they just have to spend a ton of money on I. V.

S. And patches and and supplements and subcutaneous administration or nasal sprays. Even though those are kind of all really good ways to to really just flood your system with N. A. D.

Um And and you know but before I make this other comment I was gonna make I I should I should say that if you're listening and you're above the age of about 60 this is super important for you because your levels remarkably decline after the age of 60 which is why it becomes even more important along with the consumption of a lot of these rich compounds, the purples, the reds, the blues, you know, blueberry powder, resveratrol, terrace still being a sigh powder.

You know, any of these dark red, crimson blue, purplish compounds along with your N. A. D. Again. And if you're above the age of 60 it's even more important because your levels are gonna really significantly decline at that point.

And so it is a little bit of an anti aging hack, especially if you're older, I would really be listening carefully. Um also if you're an athlete, someone who's who's exposed to a lot of inflammation, airline travel, wifi, pollution, electricity, etcetera, it's also very important.

But I think anyone above the age of 60 should should definitely be doing this. But you know, you should also consider the things that are naturally that are naturally going to increase your energy levels. And I always like to start with the foundational principles. So fasting uh an intake of a wide variety of fermented foods will also be very good for this stretching interestingly.

Uh even something like yoga has been shown to to increase energy levels a little bit, as does sauna, right? So doing like yoga in a sauna or going to a hot yoga session, that's a that's a really good N. A. D.

Hack. And then some food groups that are in the protein category particularly uh turkey, salmon and and organ meats. All of those are going to naturally increase your N.

A. D. A little bit as well. Um And so so those are those are all things that I would also not neglect when it comes to N. A. D. But especially if you combine those with N.

A. D. Therapy using any of the mechanisms that we've just discussed. You know it's a it's a real great 12 combo. Absolutely. The N. A. D. Is not gonna take away the foundational principles for what our health principles.

But when you are adding the N. A. D. On top of that so powerful in terms of what you can do with the mitochondria, the longevity, the D. N. A.

NAD for aging, stress, and foundational health

And what I find really cool is even when we're talking about chronic disease and it's been shown that with like alcohol liver disease right? Like that really depletes the energy levels and the alcohol cells or even just with other forms of stress.

Whether that's from inflammation, oxidative stress, physical stress from you know athletic performance, whatever it is like that stress does deplete RNA.

D. Levels. And so especially if a person is aging or if they are under times of high stress high insult then this would be a time that they should really be looking into optimizing with N. A. D. And stacking it like you say with all these other compounds that act synergistically with it?

Right. Absolutely. Yeah. Absolutely. And and the the alcohol pieces also you know that that that's that's pretty important. Um if you're you know spending money you're trying to top off your energy levels. Look I've I've got nothing against kind of the the whole medic benefits of a micro dose of alcohol every day.

Which is what I do. You know a little bit of of like a nice bitter with some herbs and spices, some lemon, maybe a touch of gin or vodka or like a nice glass of organic biodynamic wine. You know I have a drink just about every day.

But it's it's really kind of like a you know more of a like a you know somebody in Sardinia Italy might do small amount in the evening and you know I rarely go near anything more than one serving of alcohol per day. Again just because that's a that's a really good way to rapidly deplete energy levels. Probably.

Probably that in non ionizing radiation from dirty electricity E. M. F. Wifi routers. Um Some amount of airline travel, et cetera. Those are kind of, I would say two of the biggest ways not native E. M.

F. And alcohol intake to deplete your energy levels more rapidly. Absolutely. So give us an idea of how much you're injecting subcutaneous li and what that process is? Like, do you feel any effects of that?

Uh When do you feel those effects after doing an injection? Yeah. I already told you that 200 mg sub Q. N. A. D. Every other day. You could also make an argument for 100 every day.

I just like to to go every other day because I've noticed that I I feel the effects a little bit more and it just is one less injection I need to do you know every day um And and again increasing in uh in energy in mental clarity and also the ability to be able to get by on less sleep. Those are really the top three things.

But I notice and you know if you're going to get into self quantification, I did see a pretty significant um uh decrease in biological age parameters the telomere testing. And although I've I've gotten some Horvath clock measurements, I haven't had a chance to review them thoroughly yet.

Nor have I had a chance to to test them in conjunction with N. A. D. But I can tell you had a had about a 7 to 8 year impact on biological versus chronological age via telomere measurements after I used it for about six months. You know I did a test and retest without doing a whole lot else. And and it had a real real significant impact on telomeres. I know that that's not the gold standard now for measuring biological age. But at least kind of kind of gave me some clues that it was having an impact nonetheless on on telomere shortening.

Exactly that those benefits are showing up in in labs and you're able to track that. And that's really what you know is what I love about the N. A. D. Is like kind of how you started with, no matter if you're struggling with chronic disease and need something that will help overall everything or if you're wanting to optimize like N.

A. D. Acts on so many different aspects of our health from the mitochondria to the D. N. A inflammation that this really is a go to for that. How are you stacking in A. D.

With any peptides? How are you doing with that? I haven't found any research that specifically shows an I. D. Interaction with peptides. I certainly do use peptides uh primarily during during um some of the viral issues. I've been doing a lot more thymosin alpha just because of some of the data I've seen on on thymosin alpha.

So I I use thymosin alpha typically whenever I travel or if I've been in a in a crowded area with a lot of people or I feel that I might have been virally compromised.

Um because I exercise a lot and um I want to recover faster, control inflammation. I use a lot of BPC 1 57 and TB 500 especially for acute injuries and I found those to be pretty effective um for cognition.

Peptides, antioxidants, and ketone strategies

I like I like C. Max. And then there's another peptide that's more of a transdermal peptide called Bieksa that stacks pretty well with C. Max. And I'll use that instead of like a a new tropic or a smart drug on a cognitively demanding day.

And then um uh you know all occasionally a cycle of Tessa mckellen in the morning and C. J. C. Epa Marilyn in the evening. During some of my more heavy training blocks where I'm doing a lot of weight training or a lot of high intensity interval training and I need a little bit more of a boost in that department. Those are really great for kind of simultaneous fat loss slash muscle gain.

Uh And for the latter the C. J. C. J. P. Moreland because of the growth hormone surge. It can also be really good for some of the more deep restorative sleep cycles.

But those are some of the primary peptides that I like. There there are a few others that are good um for for nerve damage, nerve repair and a boost in red blood cell production.

Kind of like uh like blood doping. A. R. A. 490 is one that I that I really like as a peptide and then um um, hmm. Yeah and some of the athletes that I've been working with in order to kind of enhance their recovery. We've been doing both N. A. D.

And vitamin C. Higher doses of vitamin C. And even glutathione after heavy exercises, heavy race days et cetera. Is that something that you've been using at all have any data that you know of the vitamin C.

And effects on that in terms of bringing down inflammation, especially with the N. A. D. It does have some pretty good effects in the antiviral immune system department. The problem is you don't want to completely shut down oxidation cause because they're kind of blunt the horn medic response to fasting to exercise too cold, the heat, anything like that. So I'm pretty careful with excess use of vitamin C. But really you know the the thing with with antioxidants is that the only way that antioxidants are going to be able to properly clear up free radicals in the body and and scavenge those is if you actually have the ability to be able to to have an electronic sector within the system and and and the only the only way you can do that to an appreciable extent is with your your N.

A. D. P. H. N. E. D. P ratios. And and the only way to really adjust those significantly is by being in a state of either cycle at Quito's this or continual ketosis and so mitigation of of carbohydrate intake.

Some amount of of ketosis whether chief through fasting, exogenous ketones, higher fat intake M. C. T. Etcetera. Sorry there's a garbage truck going by.

Um Anyways I I think that from an antioxidant standpoint that if if people are doing a pretty good job in the glycemic variability and ketone department that higher intake of antioxidants is not that necessary. And again I'd use it as an immune hack like an antiviral hack.

Uh But I you know and if if genetically you have some pretty poor glutathione pathways you can make an argument for exogenous use of glutathione. But I'm I'm a bigger fan in terms of controlling oxidation of of ketone bodies than I am of antioxidants. Mhm. And I love this because this is definitely one of the topics here on the summit is the optimization using ketones.

Even going into ketosis. Is that something that you would say would be the ideal is to go all the way into ketosis for these benefits? Yeah. Yeah but I mean there there's there's a few things to consider such as you know if your let's see your your ap OE 44 or you have poor bile and gall bladder and liver function or maybe you have familial hypercholesterolemia or or something else that would predispose you to higher fat intake.

Especially higher saturated fat intake potentially being deleterious to cardiovascular health or brain health. Um in that case you'd want to eat a little bit more of kind of like a mediterranean slightly higher fiber diet you know not completely lower carbohydrates to the extent that you're you're eating a traditional ketogenic diet.

You know you might still be on anywhere from 40 to 70% carbohydrate based diet. But that's where the utilization some like ketone esters can come in so you can use a ketone ester or you know a ketone salt even though those aren't quite as effective and and not eat a high fat low carb diet and still get a lot of benefits of ketosis.

Um But for anyone who doesn't fall into those categories, I'm a bigger fan of fasting, physical activity, higher fat intake, M. C. T. Intake and even ketone ester intake.

So you kind of like pumping it on all levels. And then if you're an athlete someone with a thyroid condition um a lean active uh um Premenopausal female then you just want to be careful with complete mitigation of carbohydrate intake And that's where more of a cyclic chaotic approach fits in where you know on on in the evenings for example

is when you might have the majority of your carbohydrates or a couple of days a week before your heavier training days you might do like a carvery feed.

So so strict strict ketosis is not necessarily for everyone. And either as a high fat low carb diet, particularly high fat diet price of saturated fats. But long story short is there's a lot of ways to elevate ketone bodies that don't all involve just like eating sticks of butter all day long.

Right definitely. For those who aren't sure of their apoe E. Four status? Are are there specific tests or ways of measuring that and that genetic marker that you would recommend?

Testing, methylation, and getting started with NAD

Well that's that's gonna be a pretty standard measurement on most common genetic tests these days. You know I I tend to do a lot of a lot of the folks who who I have test I'll have them just run like a 23 me panel but then download that raw data and upload it to a service such as genetic genie or strategy uh to to identify some so called dirty jeans or identify some of these apple we genes.

But that that's you know you can literally take your 23 me raw data and upload it just about anywhere and get your apple status. Well let's swing back around to the N. A. D. This is such an important co factor like you mentioned with the Sirtuin one proteins. It's the main protein in the mitochondrial mitochondrial health. It's also for the longevity.

So whether you're living wanting to live longer and having a better quality of life. Uh This N. A. D. Is going to be a rate limiting factor in these proteins that are all involved with that. And there's many forms like Ben was saying you've got the I. V. Form. He does the subcutaneous injections?

You do have oral nasal spray in terms of the oral. Are you feeling those benefits? Been or is this something that that you are assuming that those benefits are there even though you're not feeling those as much.

Oh there's definitely data to show that both oral nicotine might riverside supplementation or oral. Although it needs to be sublingual uh Just because the gastric issues uh nm. N. Supplementation can significantly increase blood availability of N. A. D. You're not gonna get much hypothalamic availability just because you're not gonna get a lot of blood brain barrier.

Pen it with the N. R. Or the N. M. N. But you still get a lot of the good effects. But if you're looking for kind of the cognitive effects and the sleep effects sub Q. R. I. V. E. N. A.

D. Is kind of the way to go. Um And again you could do that for example an ivy once a month and then just keep your levels topped off in between your I. V. Administration with oral and our sublingual N.

M. N. Uh inter nasal N. A. D. Or subcutaneous. N. A. D. And I think with all the experimentation I've done um my my go to is always just a bypass oral delivery altogether.

And I'm a huge fan of basically kind of like I mentioned the ivy once every 1 to 2 months and then doing the sub Q. Injections if you can get those um like archway has a pretty good any product that I'm using sub Q.

Right now and then um doing the patches when I fly. And I think if that's doable for you that that's in my opinion. One of the best ways to keep your levels topped off is those three methods.

Yeah. Now there's a couple different patches which patches are you using? Eight hour, four hour, 12 hour. Yeah generally it's about the eight hour just because you know and I primarily use it really feel like long haul flights are long travel days.

So um you know you get a little bit of skin irritation. I think more skin irritation with the 12 hour um The four hours a little bit too short. I don't think it's high enough dosage. So I kinda like that sweet spot of the eight hour personally

awesome. Well ben if someone is wanting to get started with an A. D.

Based on your personal experience what would you recommend in terms of where would they start? How would they start? Um Maybe I. V. N. A. D. Is not something that is as accessible to them.

What would you recommend in terms of? Hey here's the best way to get started. Yeah if you're gonna go oral um You know chrome Adex has a good good form of N.

R. I like to live by nature's sublingual N. M. N. Um And then you know there's so many functional medicine doctors now who are administering N. A. D. I.

I would I would prefer that if you're working with a physician for for intravenous that you're also addressing some of the the increased methylation that's going to contribute to some of the discomfort you would experience during ivy.

Which can kind of be bypassed by using a supplement like or um or even like a good liver glandular um prior to urinate the administration. That's a really good 12 combo and you'll feel a lot less discomfort, gastric distress flushing etcetera if you do that.

Um That you have been. Yeah. Yeah exactly and I'm always more comfortable when I combine methyl donors or proceed in N. A. D. Infusion with with methyl donors. And then um yeah those are those are some of the some of the better ways to do it in my opinion.

Anything else that you would recommend for people getting started or even finding their methylation status? To know if they should be getting that before their I. V. N. A. D. S. Same thing.

You can get genetic tests if your your home as I guess for M th fr if you have any M th fr deficits. Um or you could just take a method group prior to the administration and compare the effects with and without and if you notice it's a lot more tolerable to get like an ivy or you can push the ivy and faster without discomfort.

When you take muscle groups. Prior then you know that's just that's just in my opinion. Something that gives you pretty good clues to help quantify too much, yep, awesome. Ben, thank you.

Where is the best place for people to find you? Oh, just my website, Ben Greenfield fitness dot com or if you want to like phone consults or anything like that with me, which I do with a lot of people to help with their nutrition or their fitness or their supplementation etcetera. Usually I'll you know, get people's labs and walk them through what they need to be doing and that's that's all at Ben Greenfield coaching dot com, awesome. And I feel very proud and honored to be a part of your N. A. D. Experience, having met you at my clinic and been one of the people giving you ivy and a D.

Yeah, absolutely good. And thank you again Ben for joining us today and sharing your experience and knowledge with the summit audience. I appreciate it.

Thank you and thank you for joining us today. I'm your host, DR AMY. And together let's find that next level of health and aliveness