

## What's Up with Water Fasting? – Dr. Alan Goldhamer with Dave Asprey – #780

Announcer:

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Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. On today's show, we're going to talk with Dr. Alan Goldhamer, who's one of the world's leading experts on medically supervised water-only fasting. And if you have read *Fast This Way*, or you've at least ordered *Fast This Way*, you know that I'm open to water-only fasting, but I don't think it's the only way to fast. So I'm like, "Hey, let's bring in a guy who knows more about water-only fasting probably than anyone else alive."

Dr. Goldhamer supervises the fasting and care for more than 20,000 patients at TrueNorth Health Center in Santa Rosa, California, which he founded in 1984. So we're looking at nearly 30 years of experience looking at longer term water-only fast. There's a lot to learn in today's episode. And this is one of the largest facilities in the world that does longer term water-only fasting, and they train medical professionals in the therapeutic fasting. So we're going to talk about water fasting, when you might want to do that and when you might want to do other kinds of fasting. Alan, welcome to the show.

Dr. Alan Goldhamer:

Thank you for having me.

Dave:

I'm actually really excited to have you on because the chance to learn from people who've done something for more than a couple decades is very unusual, because there aren't that many people out there who have done anything consistently for that. So I consider you to be one of the big figures in fasting, who's just consistently done this, so you develop mastery over time and over experience, especially clinical experience. So this is an interview I've been looking forward to for a very long time. So thanks for just putting the time in to become a master.

Alan:

Well, it's my pleasure. I remember when I was about 16 years old, I met a doctor who just happened to be doing fasting supervision as part of his work. And he told me that he had the best job in the whole world because the patients did all the work, the body did all the healing, and all he had to do is take credit for the good results. And I thought, "Hey, that's the job for me."

Dave:

There you go, right? All you have to do is sit there and not eat for a while and you'll be fine. Well, how long do people typically water fast when you're working with them at the clinic?

Alan:

It depends obviously, on the patient, their reserves and their condition, but fasting will range from five to 40 days. We don't fast people on very long fasts, over 40 days routinely. The guy I trained with in Australia, actually some 40 years ago, he used to do very long term fasting, 60 days, 90 days, extreme long term fasting, but he said that later in his career he discontinued that. And by the time I got there,

he wasn't fasting people over 40 days. And I asked him why we didn't do any of this extremely long term fasting? And he said because of sleep deprivation.

I said, "Oh, did the patients have a particular problem with sleeping after 40 days?" And he says "No. No, the patients were fine." It was him that got the sleep deprivation from worrying about the patients too much. So it turns out if you keep the fast from our perspective relatively shorter, under 40 days, you have few complications that arise. If you try to do very long term fasting, electrolyte balance and other things can become a much bigger challenge. And so just as a matter of routine, 40 days is kind of the cap.

Dave:

Now when you say water-only fasting, isn't it water plus salt and magnesium and things like that?

Alan:

No, it's actually water-only. We actually use fractionally steam-distilled water only during fasting.

Dave:

Wow.

Alan:

And there's no supplementation used, whether it be electrolytes or other issues. And there's a very good rationale and reason for avoiding supplementation in long term water-only fasting. It actually dramatically improves the safety. Because it turns out-

Dave:

Really?

Alan:

That although we're monitoring very carefully, electrolytes, potassium, sodium, calcium, et cetera, magnesium, there's many things that are not available to monitor that you can't monitor, the tests aren't available, you can't do it through serum. And what we've found is there are certain nutrients including things like potassium, which are very easy to monitor, but act as reliable rate limiting nutrients. So as long as potassium is okay, a lot of other downstream things you may not be able to monitor are okay. If you start supplementing potassium, you lose the ability to use those measurable things as rate limiting factors and that actually increases complications and the danger that would be associated with the pollution issues.

So what we have is a protocol that's been well-tested. We've done this actually in over 20,000 patients in the last 36 years. And the people that we trained with have done it with tens of thousands of people. So we know using this protocol, this process can be done safely. In fact, we've actually published a fasting safety study, the first fasting safety study that's been published in a peer-reviewed journal that involved tracking all the patients for five years, and all of the symptoms, and classifying them according to the CTCAE criteria, the adverse events criteria on hundreds of patients.

And so we know now exactly what comes up and doesn't come up in fasting. And we know that those criteria, there's five categories of criteria, the fifth being death, the fourth being life-threatening problems, and the third being serious complications. So we know on hundreds of patients exactly what the likelihood of any given criteria are. And I'm happy to say that in 36 years in 20,000 subjects, many of

which were very ill, everybody that's walked in to be able to fast has been able to walk out. So we've had no death associated with it. We had very little serious adverse events, the biggest one would be hyponatremia. So we monitor sodium levels, if sodium levels got too low that could become a problem, and then that would warrant terminating the fast. And the same thing with potassium and other issues.

Dave:

So I've got to ask, okay, so you're running out of salts, which can be fatal, which is why some people will die during marathons and all... Why wouldn't you just put a pinch of sea salt in and keep going? Why would you terminate the fast after that?

Alan:

Well, again, because the problem is that the body does a really good job of regulating and recycling and restoring electrolyte balance during water-only fasting. And as soon as you start supplementing, whether it be sodium, then it puts increased load on other nutrients, it gets complicated, and there's no good long term safety criteria using supplemented fasting. And in fact, if you look at the medical literature, where there's complications, myocardial fibril breakdown, and other serious complications, it's always in supplemented fasting. And I believe it's because if you don't supplement, you cannot fast longer than whatever the rate-limiting nutrient is. And as long as you're monitoring as we do, sodium, potassium, magnesium, et cetera, you're not going to... We have arbitrary standards, and once potassium gets below 3.0, that's the end of the water-only fasting.

And so in some people that might be at day 12, someday it's going to be a day 40, someday it's never a limiting issue. And you can't tell with baseline lab what their total body stores are. So we monitor these periodically. And using our protocol, where we're doing twice daily visits with clinicians, where the patients are physically examined twice a day, we're doing minimum weekly blood and weekly urinalysis, and then we chart and correlate those, we know that if we follow our protocols and we use our rate-limiting nutrients, we're not going to get into likelihood of problems, and we've been able to prove that. So if you want to start modifying that-

Dave:

Cool.

Alan:

Now you have to prove that it's safe to do it a different way. And the problem is our arrogance can exceed our ignorance. And so supplemented fasting actually-

Dave:

In medicine, really? I can't imagine that happening. Alan, how dare you say such a thing. A study just came out yesterday, where they figured out that junk DNA like, "Oh, that's actually part of our circadian timing system." And every time any scientist has ever said, "That's junk in the body," 20 years later they're going to be eating crow, you know it. So, yeah, there might be a problem with arrogance in all kinds of fields. So I get it. Yeah.

Alan:

So, it doesn't mean that somebody else couldn't come up with a system that would be even better or more effective, safe or whatever, but to date that hasn't been proven. So we're going to go with the system that we have, evidenced-

Dave:

Yeah, because you know it works.

Alan:

[crosstalk 00:08:41] Working experience with. But again, I'm open to the idea that it might be better. But the reason we don't supplement even though it kind of makes sense like, "Oh, if sodium's low just give him sodium." It's because of a more complex, broader baseline understanding of what we're trying to do.

Dave:

When you examine someone twice a day during a water fast, what do you look for?

Alan:

So the first thing we do is we take vitals. So we're looking for not just pulse rate, but rhythm, amplitude, and regularity. We're also looking at their blood pressure, and that might include blood pressure lying as well as sitting and the change that occurs. The orthostatic change that occurs when you have a person sit up and take their pressure. We're looking at respiration rates and we're looking at other physical parameters. Sometimes you can tell a lot just by doing an abdominal exam and getting an idea of what's going on with liver function.

We're looking at their presentation of symptoms. So there's certain patterns that we're used to seeing in fasting. For example, early in fasting, the mouth will often code up and taste like something crawled in there and died, and your people will have-

Dave:

Yeah, toxins.

Alan:

Foul odors and skin eruptions and mucous discharge and low back pain and headache and irritability. Sounds great, doesn't it?

Dave:

Yeah, you really sold me on this.

Alan:

Yeah, those patterns change as the fast progresses. And a lot of times, you'll notice people that come in, for example, if they're quitting, if they're addicted to caffeine, or if they're addicted to alcohol, or they're-

Dave:

Or maybe exercise.

Alan:

Abusing drugs. Exercise usually doesn't create a lot of problems in terms of fasting-

Dave:

I'm just messing with you.

Alan:

But withdrawing from caffeine is a really significant symptom. In fact, we try to withdraw caffeine before we actually start fasting because the withdrawal symptoms are so significant. You don't want to do that-

Dave:

It's not a bad idea.

Alan:

At the same time you adapt to the fast.

Dave:

For a long term fast-

Alan:

And so...

Dave:

Where you're looking to lower the load, I could see that, okay.

Alan:

Absolutely. And so, we're looking for the patterns. And if the patterns are consistent, or for example, people get what we call healing crisis where chronic problems become very acute. And they don't always like it, because it isn't that comfortable. But we know if a person's had, for example, arthritis, and their joints swell, and they become inflamed, that's usually a positive sign that the body's generating an acute response, hopefully resolving a chronic condition.

That's very different than problems that develop that we don't expect to be coming up. And part of our job clinically, is differentiating what looks like a problem but it's a good thing, from a problem. Because not everything that happens is always a good thing. Sometimes it's a bad thing. And that's why we're correlating history, exam, lab and daily monitoring. And by watching people twice a day minimum, you really get a chance to be in touch with kind of what the pattern, what the flow is, and it allows us to do an effective job of making fasting safe and effective.

Dave:

Now, one of the supplements that I write about in Fast This Way that seems to work amazingly well during fasting, and which is clearly not water-only fast, is activated charcoal, which reduces skin eruptions, it absorbs the LPS from the gut, the lipopolysaccharides that bad bacteria make, that when they get stressed they make more of it. Is that also something? Do you do any toxin binding? Are you doing enemas or poultices or anything? Or you're just like, "Water and just man up?"

Alan:

Right, well, we don't use any therapeutic intervention. Now, charcoal-

Dave:

Wow.

Alan:

Has a long history of use as a detoxifying agent, but you want to remember, what we're trying to do is give the body a chance to mobilize and eliminate accumulated intermediary products and metabolants, as well as toxic products. And so the fact that this body gets a skin elimination, we see it as actually an adaptive response, a positive response, not necessarily something to suppress or interfere with.

And so although charcoal may not be a suppressive agent, the idea being that these acute responses as long as they are self-resolving, we see that as a positive sign of the body healing itself, not necessarily something to be interfered with. Many things you can do will stop the symptoms, but actually, they also stop the elimination. So working to encourage the body to take us through that response.

Dave:

Maybe you could just take a stab and then a leave during your water-only fast, a very different result. I'm with you there.

Alan:

Well, that's a really good point. For example, lipid levels, cholesterol levels will go up significantly during fasting, of course, to 100 milligrams percent in cholesterol, because, in part, you're mobilizing fat infiltrating the vessels, the place that that goes is in the blood. So if you take the blood, you're going to find PCB levels go up significantly.

Now, that doesn't mean we want to take a killing agent to try to necessarily deal with that during fasting, we want to give the body a chance to mobilize, process and eliminate these toxic products. And it means that sometimes there's unpleasant symptoms during fasting, it can be an unpleasant process. Our job is to make sure it's a safe process. And clearly we've got a history of [crosstalk 00:13:46] being able to do that effectively and safely.

Sometimes those symptoms become concerning enough that you may want to slow the process down, and we'll move from a water-only fast to a modified fast, and the introduction of 600 calories of vegetable-based juices will dramatically slow down the rate with which these processes are occurring, allow for rehydration, re-elementation. I mean, there's reasons why we would choose, for example, to not just continue through water fasting, and that's a decision that's made every day twice a day, whether this still appears to be a net positive process.

Dave:

What's the number one reason that people come to you for longer fasts?

Alan:

Well, I can tell you that there are four primary classifications of conditions that people come for. One is high blood pressure. And the reason for that is we've published studies on the treatment of high blood pressure. In fact, we've published a study over 10 years ago that involved 174 consecutive patients that

had high blood pressure. And 174 people lowered their pressure enough to eliminate the need for medication. We have the largest effect size that's ever been shown in treating high blood pressure in humans-

Dave:

Wow.

Alan:

With an average of effect size of 60 points in sedentary hypertension. And that 60 points, not taking into account that they started on medications and end up off medications. And those fasts range from five to 24 days in that study.

Dave:

Wow.

Alan:

We have a second study treating borderline hypertension five to 40 days. And again, virtually every essential hypertensive patient will normalize their blood pressure. And if they're willing to do really dangerous and radical things like eat well, exercise and go to bed on time, they can sustain those results. So this is a condition we see a lot-

Dave:

That was my next question. Does it stick around?

Alan:

Yeah, because we've treated a lot of it. We also treat a lot of autoimmune disease. So, as your viewers know, autoimmune diseases are diseases where your own immune system is attacking your own tissues. And so these are the itis conditions, the colitis, the Crohn's disease, the vasculitis, the systemic lupus erythematosus. These autoimmune conditions are often thought to be aggravated by a process of gut leakage, where proteins that enter the body, the immune system reacts, genetically vulnerable people, the immune system gets infused, attacks its own tissues.

And so if the protein for example, if you happen to have the HLA-DQ gene and you're sensitive to gluten, and you eat gluten, and your body attacks your colon, we call it celiac disease. But if... Our stomach. If it attacks the thyroid, we might call it Hashimoto's thyroiditis. If you've noticed joint symptoms, we've got rheumatoid arthritis, whatever. The idea being these gut leakage related autoimmune conditions respond well as you'd expect to fasting because number one, there's no dietary antigens. Number two, there's a powerful anti-inflammatory effect to fasting. All the acute phase reactive proteins, high sensitivity CRP, fibrinogen, pepsinogen, whatever you want to measure, tends to consistent and predictably go down during fasting. So the gut leakage appears to be able to heal.

And then if you follow the fasting, with a health promoting diet, you can avoid the free radicals and the pro-inflammatory materials that lead to the gut leakage. And yes, you can control autoimmune disease. You're not curing it, because if you go back to the stuff that causes it, it comes back, but you can manage it, and you can manage it effectively off the prednisone and methotrexate, and the other medications that have such dire long term consequences.

We also treat a lot of Type II diabetes. So Type II diabetes is an insulin resistance caused problem. And insulin resistance means that people are making insulin, but it's not being effectively used. And fasting has a powerful effect at resolving insulin resistance. In fact, it's probably the most powerful tool we have at normalizing the body's ability to use insulin.

And so, what happens when insulin levels normalize, obviously, blood sugar levels normalize, a lot of the cravings and the binging and a lot of the prompts that people have normalize, because now their insulin levels aren't bouncing all over the place, telling the brain that they're starving to death, even though they've got plenty of reserves on board. The other condition that we've been seeing a lot of lately is lymphoma. So lymphoma is a type of cancer-

Dave:

Interesting.

Alan:

Involving the lymph system. And what happened was, we had some positive results in individual cases with lymphoma, and we published a paper a couple years ago in the British Medical Journal that involved the effective treatment of lymphoma using fasting and diet, and with long term follow up. And so then after that case was published, it got a lot of exposure. And then we've been seeing a lot of doctors referring us patients for the treatment of lymphoma.

So we're now trying to publish a number of case reports so that we can justify doing a clinical trial. So between high blood pressure, diabetes, autoimmune diseases in lymphoma, that's a big part of the patients that we're treating and the research that we're doing right now, in conjunction with our colleagues at the Mayo Clinic at the Buck Institute, at Washington University and other places that we're affiliating with, because we've gone from being criminal quacks to cutting edge researchers.

Dave:

You've really taken it to the point where you can do clinical studies and all. What I want to know though, is there's a lot of people listening right now saying, "Okay," they've just read *Fast This Way*. I've talked about all different types and lengths of fast and all. But one thing that I don't have a good answer on is what is the longest safe, self-administered water-only fast that you would advise?

Alan:

Well, I personally recommend that everybody fast every day. And I suggest that they do it, depending on their goals from 12 to 16 hours. So that means that everybody is limiting their feeding windows between eight and 12 hours, and that during the time from their last meal, which preferably is at least three hours before they go to sleep, at a reasonable hour, they have a bit of fasting every day. And people like Valter Longo and others suggest that cumulatively, that 12 to 16 hours of fasting every day may help on a number of levels. It may help prevent overeating which prevents the obesity. It may help induce metabolic changes and biological changes that cumulatively are thought to be protective.

And it avoids a lot of the eating for the wrong reasons. Sometimes people eat because they're tired, and they should sleep. And sometimes they eat because they're bored, and they should engage in productive activity, or they're mad and they should do exercise or make the other people eat. But so this idea of fasting every day, and then breaking your fast with breakfast, whatever time you know that's appropriate for you, is good. There's also evidence that people that exercise before eating during that-

Dave:

Yes.

Alan:

Intermittent fasting state, [crosstalk 00:20:49] preferentially mobilize fat. And so it may help keep total body fat down, which is thought to be a positive, long term strategy for maintaining health and preventing disease. So I think this, and I think virtually everybody can do some type of intermittent fasting, even if they're not yet healthy enough to get off their medications and other things, there's still a way to design intermittent fasting that can be done by people at home safely, effectively every day.

I also think that modified feeding regimes where people they're attempting to lose weight can reduce their caloric density, for example, to six to 800 calories, whether they're using a commercial product like ProLon like Dr. Longo advocates, or whether they just reduce their diet to plant-based vegetable foods and other lower caloric density foods so that they have a lower caloric intake than what they actually need for function, can cumulatively help with weight loss facilitation.

Dave:

Isn't plant-based sort of an open window there?

Alan:

Well, we do, we-

Dave:

For instance, heroin is a plant-based substance.

Alan:

Absolutely.

Dave:

I mean, I'm being extreme there, but alfalfa... Which plants? You can't just say plant-based without it having a meaning.

Alan:

Yeah, well, we describe dietary recommendations in exclusively whole plant foods. So these are not refined carbohydrates and processed flour products and all the rest of the things that make up 80 to 90% of the carbohydrates that people eat in the diet. So we're talking about fruits... Excuse me. Fruits and vegetables, including in our approach starchy vegetables, the Hubbard squash, the butternut squash, the sweet potatoes, the tubers, the starchy vegetable materials.

Dave:

Yeah, those are the kind of starches I recommend. Yeah.

Alan:

There's lots of green vegetable materials and appropriate amounts of fruit particularly, some fruits might be more desirable in large quantities than others, your berries, your melons, other things that

may have advantages, because of the fact that many of the fruits we eat today are hybridized, very high sugar, foods that are low in minerals and low in fiber content. So you wouldn't want to necessarily just be eating, say a fruit-only diet or something, because that would have serious consequences long term.

So the point is, yes, exclusively whole plant foods, but more importantly, from my viewpoint, is eliminating the chemicals that are added to food that make people fat, sick and miserable.

Dave:

Yes.

Alan:

And those chemicals include SOS, the international symbol of danger, or salt, oil and sugar. So added salts, added oils, and added sugars, from our perspective, have serious consequences. And not only in terms of allowing artificial increased consumption of foods because of the pleasure trap, the artificial stimulation of dopamine in the brain that comes from these chemicals that aren't really food but food byproducts, concentrated food byproducts are added to food.

Eliminating SOS from the diet and keeping it strictly to whole plant foods means you end up with a diet that's around 10 to 12% of calories from protein, about 15 to 20% of calories from fat with the balance coming from whole plant starches, not refined carbohydrates. And that's a diet that-

Dave:

So it's a high starch, low fat diet.

Alan:

It is a high complex carbohydrate diet that's moderate in protein and fat, that has 10 to 12% of calories from protein, 15 to 20% of calories from fat with the balance coming from carbohydrates. So it's a higher carbohydrate diet than the people advocating keto diets are advocating because they're going to a higher fat, very low carbohydrate diet.

What I would argue is that, regardless of the short term benefits of the various dietary programs, and I think you can make a case for just about anything short term, I'm more concerned about what's the long term sustainable, most healthy diet that I can put my patients on? And what we use is this exclusively whole plant food SOS free diet. And I'm happy to say that we have the luxury of having 30 and 35 year follow ups on patients now.

And so we're seeing these patients that have been doing this approach that were very fat or very sick, and now are very healthy. And the most common thing they tell you is, "Gee, everybody they know is falling apart." Here they are 30, 35 years later. In fact, my mother is a good example. When she was 92 years old, she realized she had outlived all 52 of her lifelong friends, everybody she had known and everybody she had cared for was dead. All of her friends that used to make fun of her diet, and all of the friends that made fun of her fasting had passed away. And she said, "Alan, you need to warn your patients. If they're going to do this diet and lifestyle, make younger friends." And she said much younger.

Dave:

It's actually a real thing. In my anti-aging book, I talk about that. If you're planning to live to at least 180 like I am, then you better start having friends of different ages, because you'll be very lonely and loneliness is one of the things that will kill you.

Alan:

Well, people eating conventional diets will deteriorate in their sixth, seventh, eighth decades if they get that long. And that's where you see the heart attacks, the strokes, the cognitive decline. And the promise, if you delay that, if you are on a healthy program, you have a much better chance of delaying that infirmity. You won't spend the last 9.8 years in debility like the average person, or 16 years in poor health. It's not that you're going to live forever, because we know that of 100 billion modern humans that have been born on the planet, there's only been five individuals that are well documented to have lived past 117. And so chances are, that how long you live may largely be determined by genetics and luck.

But how well you live, if you're going to live until you die because you went to sleep one night and didn't wake up. Or if you're going to spend your last decade unable to talk or move, lying in some nursing home bed waiting for somebody to come and change your diaper because you stroke out-

Dave:

Exactly.

Alan:

That is going to be determined by what you put in your mouth and whether you exercise, and perhaps your stress management and sleep habits. There's other variables besides diet but diets really is a dominant-

Dave:

Not cleaning the toxins.

Alan:

Factor at preventing premature debility. And so, what we encourage people to do is take the diet, sleep and exercise really seriously, and put their focus in making sure they get enough sleep. They get regular appropriate exercise to develop flexibility, strength, balance, et cetera. And that they put a whole natural foods diet into their body and avoid meat, fish, fowl, eggs, dairy products, oil, salt, sugar, highly processed foods, and all the drugs and chemicals that people are basically subsisting on.

And from our viewpoint, the patients we have doing that now we've got long term outcome data suggesting that at least that's one way to sustain long term health. It doesn't mean it's the only way. It doesn't necessarily mean it's the best way because we haven't done the research with long term outcome yet to show that one way is necessarily superior to another way. This is what we believe. This is what we're doing. This is what I'm practicing. And it does seem to be working well.

And so the thing that's interesting is if you look for the common things between these different types of dietary approaches, you find there's differences, but there's a whole lot that seems to be in common. And almost everybody agrees that refined carbohydrates are a problem, they might debate about how much is acceptable, we argue for none. Most people would agree that too much added salt in the diet can be a problem, particularly if people are salt sensitive and have blood pressure issues, edema, swelling.

They also recognize excess salt can be a problem with passive overeating, that the same food eaten in its entirety without salt may be consumed at a larger quantity with salt because of the stimulation of passive overeating. And also the effect on the gut microbiome. Salt's a powerful preservative, that's how it's used, salted meats and other things to preserve it because of its effect on

bacteria. Well, you have five pounds of bacteria living in your intestinal tract, five pounds of living creatures, a trillion creatures eating, drinking and pooping inside you. So what you feed those bacteria affects what kind of bacteria you have, and how well they live.

And I believe that there's evidence to suggest that soluble fibers are an important part of a normal microbial biome. Obviously, you don't get normal bulk stool. And part of the benefit of having bulk stool is you don't get the straining. When you don't get the straining, you don't get the hemorrhoids, the fissures, you don't get the prolapsed uterus, the varicose veins, the other things that come from chronic constipation. And chronic constipation is a fiber deficiency and microbial imbalance.

And now as we learn more about the microbial imbalance, you know there's 1,000 organisms, strains of organisms that live in the gut in a healthy gut, but that depending on the diet can profoundly affect the type of organisms that are there. One of the things that's neat with fasting is there's actually a rebooting of the microbiome that occurs in fasting. And we believe that, that rebooting of the microbiome may be an important part of why we see such tremendously consistent results in treating autoimmune disease.

Dave:

I think you're onto a major thing there. Have you done studies? I mean, it'd be easy to get a Viome test or look at the bacterial changes before and after. What do you find?

Alan:

Yes, we've done the first study on long term water-only fasting on the gut microbiome. And we did this with Luigi Fontana from Washington University, where we took patients before and stool samples and after. And that's a completed study that is now being processed by Washington University. And I haven't seen the data yet back from the changes. And the comments, of course, from Dr. Fontana was it's really complicated because they're trying to isolate all these different strains. So I haven't seen the data yet. But what we see clinically, is that these patients with microbial imbalances tend to improve dramatically. We do really well in treating conditions ranging from ulcerative colitis and Crohn's disease, to the dysbiosis and chronic constipation, et cetera.

Dave:

That makes a lot of sense, I'm still puzzling over the salt thing. I mean, the former president of the American Hypertension Society, who instead of looking at the DASH studies and in Haynes, these are big interviewing people about how much salt they think they eat, which is where a lot of the anti-salt stuff comes from. He actually looked at excretion of sodium and actual sodium intake on 3,000 patients, and at the end of a couple decades of this work, one of his quotes was, "If you want to live longer, eat more salt." And the reason for that was that when your sodium levels drop, your daily intake of sodium drops below about 2.5ish, which is a little bit lower than I think the FDA is, it might be 2.1, I'm forgetting. Anyway-

Alan:

2.4 is the...

Dave:

Is it 2.4? Thank you. Good, I knew it was in the low twos but I could remember which one. Your renin levels go up. And when renin levels go up, your heart attack risk goes up. And I know I feel like absolute garbage on a low salt diet. I mean, it is ruinous for my health. What do you think is going on there?

Alan:

So first of all, you got to be really careful about errors of attribution and association and causation realities-

Dave:

Of course.

Alan:

In terms of that understand people on whole plant food SOS free diets, objective measures, and incidence of cardiovascular disease dramatically drop. I mean, it's overwhelming. We've treated literally thousands of patients with cardiovascular disease. And we see very predictable and consistent responses, perhaps some of the most predictable responses that are actually in treating hypertension, which is one of the leading contributing causes of death and disability in industrialized countries.

So we know that this condition does respond well. It is true, there's a difference in sodium sensitivity to people. And our diets are not no-salt diets, they're just relying on the sodium that's naturally pleasant in an extremely high plant food diet. So they're still getting between 500 and 1,000 milligrams of sodium a day, it's not that there's not salt, it's the salt that's present in the food. But the food has to be coming from a large volume of plant-based foods in order to get enough sodium in it.

The other thing is we don't add sugar to the diet, because you get all the carbohydrate you need from whole plant foods. And we don't add oil to the diet, because it turns out the essential fatty acids, including the linoleic acids that you need to form the [decosavaseroxsonic 00:33:11] acid, et cetera, are present if the whole plant food diet includes a variety of nutritious foods.

So, we do use nuts and seeds and avocado and other foods, as well as fruits and vegetables, which also have their load of all the salt, sugar and oil that people need. And so I agree that many diets that are put together could be low in all kinds of things. But that's not true when the diet is 10 to 12% of protein, 15 to 80% of calories of fat, the balance coming from whole plant food complex carbohydrates and...

Dave:

It's interesting because there's a lot of just dogmatic kind of religious perspectives out there on this, and people will come in and, "If you get another carb you're a bad person. You eat another animal, you're a bad person." And what it comes down to is when you're going on any of these diets, including the stuff that I recommend, and definitely what you're recommending is you're avoiding the vast majority of toxins that are put in there by big foods. And you're not adding oil, so you're avoiding all of the processed seed oils that I think are just death, right? And you avoid that on the approach that I take as well. And when you're fasting, you get none of the bad stuff.

So I feel like a lot of aging comes from stuff that's in food. And then if we accept that might be a case, whether it's man made stuff from food and processing and inappropriate burning the food, even if it's natural and grass fed and organic, and whatever else, you burn, your charr it, it does something different, right? So fasting cleans all that out, which is one of the reasons that it's a magic cure. And then

the big question is okay, what do we put back in that's the least inflammatory that feeds the right gut microbes and all? And I don't think the answer is known for sure.

Alan:

Well, I think that's an area of active research. And I think that is a critical question. What is the best, cleanest, burning sources of calories for humans to eat? We have our own model that we follow, which is the exclusively whole plant food SOS-free diet. Now, what's interesting is-

Dave:

What does whole plant food mean? Because you don't eat noodles of walnuts, I'm sure you peel your egg plants and you're not really eating whole foods, right?

Alan:

Well, we are eating whole plant foods that are minimally processed. The difference is for example, if you wanted to eat... There's a big difference between eating a food that's vegetable foods or whole versus you grind them up into a powder, you dehydrate them, you bake them at high temperature, you add sugar and salt and you call it bread. There's a difference between say, eating boiled wheat berries and eating bread. Okay? Well, first of all, boiled wheat berries are kind of disgusting, you probably wouldn't eat them alone.

Dave:

I was going to say I wouldn't eat it alone.

Alan:

So what we're talking about is recognizing that for example, people talk about vegan diets. Well, you could Coca Cola, French fries, potato chips, I mean, you could put the most disgusting diet together and it could be vegan if it didn't have animal foods in it. You can have a diet that's a plant-based diet but that's full of highly processed refined carbohydrates could be a bunch of junk. But I'll tell you what I eat and what our patients eat and give you...

If they get up in the morning. They may have steamed squash, green vegetable materials. They might have oatmeal, they may have some flax seeds. Then at lunch and dinner, we're going to have huge vegetable salads. Now we know that we have enough salad in front of us even if we don't have a scale to measure it out, because anybody looking at ourselves would go, "Oh my gosh, you're not going to eat all that are you?" Because they're huge. And then large amounts of steamed vegetables, particularly green vegetables, your collard, your broccoli, your collards.

And then enough starchy materials, whether it's starchy vegetable materials, like Hubbard and butternut squash, sweet potatoes, et cetera. Or non-glutinous grains, whether it's quinoa, rice, millet, whatever, or if they're able to digest them, things like peas or beans. So that's the bulk of the diet. We use portion controlled amounts of high fat foods, so avocado, nuts, seeds, and we avoid everything else. I just tell patients, if you look at something and you really, really, really want it, you can't have it. You get nothing.

Dave:

That sounds like a no to me.

Alan:

Because all the things you really want are these drug-like highly processed fractionated foods that people get these cravings for. Whole plant foods you'll love it, you'll love eating, but you're not going to... It doesn't matter so much if it's this one or that one, it's not the end of the world. You can go with the seasonal changes in availability, you don't have to rely on packaged processed foods.

Dave:

I remember when I was a raw vegan, I did this very reliably, very carefully composed and all but I had to buy these salad bowls that were like the size of the table just to get enough food in me.

Alan:

Yep, that's absolutely true.

Dave:

It was really rough.

Alan:

Salad has 100 calories a pound. If you were going to try to live on salad, you'd need 20 pounds or more a day of salad.

Dave:

You can't do it.

Alan:

It's if you started eating at 6:00 AM, you didn't stop till midnight, you're not getting 20 pounds of salad in. Fruit, 300 calories a pound. A little bit higher caloric density, but still really high in sugar, low in mineral and fiber content compared to vegetables. You want the diet, from my opinion, to have a large amount of vegetable materials. And if you're not going to be using animal foods in the diet, you have to eat a very large volume of plant foods because they're very low caloric density.

Now that's good, especially initially for people that are overweight, because they can eat a lot, they're still losing weight, their blood sugars are stabilized, they do fine. Eventually, you get to where your efficiency does improve somewhat. It's interesting, they used to think that fiber was completely indigestible, we know now that the micro fiber and people eating large volumes of plant-based foods actually does get as much as 60 to 80 calories a day out of actual fiber breakdown, which is really amazing when you think about it. And so overtime-

Dave:

Yeah, the body will modify that.

Alan:

You get a little more adapted and acclimated to eating these larger forms of plant-based diet. And when people do this initially, oftentimes they do, not only are they detoxing, but they often don't feel that good energetically, because they're literally making a conversion to burning a different fuel type. You do get better and better at it. Believe me, people that do these diets over the long run not only get healthy,

but they're able to sustain high levels of energy. And actually you can see many examples of highly competitive athletes that do plant-based diets and do very well.

So, I don't think that there's only one way to maintain high levels of energy functional fitness. What I'm more concerned about is what type of diet is likely to be long term sustainable, that will minimize the likelihood of cardiovascular disease and cancer. And so that's really where I think the research has to focus is what's the best diets over the 20, 30, 40, 50 years that we're hoping that our patients are going to live.

Dave:

Water fasting has merit and that what you eat before and after your fast makes a huge difference in how well the fast works?

Alan:

No question. In fact, one of the things we always do is we want people on a very clean diet for a couple of days before fasting, we want them off their addictive drugs, the caffeine, the alcohol, recreational drugs. We want them off of animal products for 48 hours, because the lower fiber content tends to lend itself to more difficulties post fasting in terms of constipation and other issues. If they're eating just plant-based foods for a couple of days, we don't have any bowel activity issue problems during or after fasting.

Then they go through the fast and then we ask them to stick strictly to a health promoting diet and lifestyle for 50 years. Now, once we get our 50-year follow ups, they're free to do whatever they want, they can experiment with something else. But we just in order to get our long term outcome data, we ask them to stick strictly to the process. And the thing is, once they get into fasting, it changes everything.

Dave:

It does. It really does.

Alan:

And there's short term fasting may have long term benefit, and long term fasting can have profound short term impact. And we know now in large part because of work done by Longo and others, that fasting has some really profound effects on the biology that's going on in the body. We know that there's things like insulin resistance related mechanisms with Adiponectin and ghrelin and other things that are profoundly increased during fasting.

We know that NPK, for example, which has to do with the downregulation of PGC-1alpha is impacted by fasting. We know that the Beta-hydroxybutyrate, which is the normal fuel that the brains burn preferentially during fasting is increased, and that's associated with increasing BDNF, brain-derived neurotrophic factors associated with preventing Alzheimer's disease and dementia.

He did research, they look at rats in a cage, where the rats are genetically identical, they're fed exactly the same, but one rat has a wheel work and exercise. And it will. And the exercise in rats don't get the dementia changes. And they said, "Why?" Well, it turns out, it's increased BDNF that's protective against the nervous system. That goes up with exercise, it also goes up with fasting. In fact, what's interesting-

Dave:

It does indeed.

Alan:

Is almost all the biomarkers that go up with exercise, go up with fasting. And you say, "Well, why is that? In exercise, you're vigorous, you're running around. In fasting, you have to lay around and not do anything. How could they both be affecting the same biomechanisms?" And the reason may be is that both are undoing the consequence of dietary excess. And when you undo the consequence of dietary excess, you'll double the lifespan of the rats, we believe make the humans live longer and better.

And so it may be that just like exercise and fasting don't look like they would be the same kind of thing, they may be affecting the same mechanisms. And it keeps going. Insulin sensitivity, you can increase insulin sensitivity with exercise, you increase insulin sensitivity post fasting. There's something called cellular stress resistance and cellular stress adaptation. Longo did research with rats where he took rats that both have cancer. And they give chemotherapy to the first group of 30 rats and they all die because the chemotherapy at the high enough level-

Dave:

Yeah, that'll kill you.

Alan:

To kill off all the cancer cells kills the rats, which is not very good. So then you take the same rats with the same cancer but you fast them, short periods, before, during, after fasting all the rats survived, dramatically enhances cancer free survival, because fasting makes the cancer cells more vulnerable, because they don't do as well in a low glucose environment, a high ketone environment, and it helps protect the healthy cells from the consequences of the chemotherapy.

And it was at that point that oncologists often went, "Well, wait a second. So fasting allows us to do more chemotherapy with less consequence?" All of a sudden fasting went from quackery to cutting edge research, and now all of a sudden there's some interest. In fact, what they're trying to come up with right now are what are called fasting mimicking drugs.

Dave:

Yes, [crosstalk 00:43:49].

Alan:

Not just fasting mimicking diets, but fasting mimicking drugs. So drugs that mimic some of the physiological effects that occur in fasting. And although that's very interesting, I would suggest we don't have to worry about fasting mimicking drugs, we can do fasting. And if we use fasting we can induce the changes that they are so hard working on trying to mimic. Forget about mimicking it, let's actually do it. And then the bigger thing may be the changes in gut microbiome. We know that there seems to be big changes. I can't quantify what those changes are yet but we will be able to eventually do that and that's part of the research that we're working on.

We also know that fasting decreases things that are critical, also that are decreased in exercise oftentimes. For example, glucose and insulin are profound, and insulin sensitivity are profoundly affected. IGF-1, insulin growth factor one, reduced profoundly both in exercise and with fasting. Leptin, blood pressure and heart rate profoundly affected as I said, largest effect size ever shown in treating hypertension. mTOR, mammalian target of rapamycin which that goes down but that's associated with

increasing autophagy. And so you've got the Nobel Prize in 2016 to a guy that's recognized the importance of autophagy, the ability of the body's-

Dave:

Finally.

Alan:

White cells to eat up cancer cells and detoxify itself. We talked about the microbiome changes, and that's a whole interesting area that I think is just being looked at. The inflammatory markers, IL-6, TNF-alpha, all these fancy biomarkers that we're just now being able to get to start to measure, again, consistently predictably reduced with fasting, as is inflammation. And it's possible that inflammation itself is really what's behind the driving force behind the diseases of heart disease and cancer and so many other things that we're seeing.

So, I'm saying that there's a lot in common between whether it's intermittent fasting changes, water fasting changes, exercise, and all of these attempts to reduce dietary excess. All of them are essentially trying to reduce inflammation, get rid of gut leakage, and give the body a chance to heal itself from the consequences of a highly processed food diet, whether it's processed animal foods or processed plant-based foods.

Dave:

Oh, it's fascinating that you've been doing this for so long, you're seeing the results. I actually, have one more question. Let's talk about coffee. Now, it's all a whole, I guess, it's not really a whole food unless you eat the coffee cherry, which you can do. I use it in one of my supplements that raises BDNF four times more than exercise. But the coffee bean itself, okay, you're into plants, and it seems like caffeine... Well, not seems, there's a study from UC San Diego, it doubles ketone production, the amount of caffeine in two small cups of coffee. So why the hate on caffeine?

Alan:

Well, caffeine is a highly addicted nervous system drug, it as a 17 hour half-life, it affects the quality of sleep, even coffee that's taken in the morning still has a measurable effect on sleep quality. Coffee itself can be really irritating to the gastrointestinal system. And ask people with gastritis how they feel about drinking coffee-

Dave:

Compared to kale, coffee is not anywhere near...

Alan:

Well, I'm not saying there's not other things that are also irritating. And the fact that coffee is less bad than something else doesn't make it good necessarily, from my viewpoint. So we're kind of down on all these drugs, including caffeine. And people don't go through, severe headaches because they stopped drinking, stopped eating carrots, but they certainly do when they stop drinking coffee.

Dave:

But if they stop exercising, if someone who exercises every day and gets their endorphin high and stops for three days, they get just as cranky as if they quit coffee.

Alan:

Yeah, that could be with withdrawal too. That's true. That could be true. So-

Dave:

So I'm kind of like, I would quit drinking coffee tomorrow if I could see the evidence that it was going to lengthen my life or improve the quality of life. But the evidence I keep finding is that I Google any medical condition and coffee, and I'm like, "Well, it seems like it's generally doing more good than harm in hundreds of stuff."

Alan:

So, like McDougal says people love good news about their bad habits. So, I would argue that people make the same argument for red wine because it's got resveratrol.

Dave:

Yeah, but those arguments don't hold up in the science-based studies.

Alan:

No. That's true. They hold up even well then the argument that coffee is some type of health food.

Dave:

Yeah, I mean, I have people-

Alan:

We got to disagree on something. If we agreed on everything, there'd be absolutely no reason for you to even have me on this show, because [crosstalk 00:48:12].

Dave:

I'm looking to you, "Oh, coffee raises this one substance that's really bad." And so I'm always curious. So, I could be wrong on anything. I'm pretty sure I'm right on coffee because there's like every year another study comes like, "Oh, people live longer. Oh, less cancer. Oh..." All these things. And I'm just like, "Okay, I'm pretty sure it's there and I know that it makes fasting a lot easier," because that doubling of ketone production in the morning is wow, okay, ketones go up, ghrelin goes down, then CCK goes up, and then you just don't think about food.

And then the willpower component goes away, because most people who are listening, if they're doing an intermittent fast, or even a longer run, they still have a job and their kids are hanging off their arms, and they're trying to do their job, and everyone's locked in their houses, if they're in California and et cetera, et cetera. So how do I balance, fasting with the other stresses of life?

Alan:

I agree that one of the important ways to get the most benefit of fasting is to do fasting in a restful state. And that's where we talked about, we prefer especially long term fasting needs to be done in a controlled setting under direct supervision where there's been a history exam, lab, proper monitoring. And in those cases, there would be no reason to just artificially stimulate the nervous system with exogenous drugs like caffeine, because you're in a restful state.

I'm not really an expert in how do you do fasting in a home environment raising kids, and that's not something I've had a lot of experience with. So maybe it's possible that intermittent fasting may have to be treated differently. I would really defer to people like Valter Longo and others that are really experts in that type of thing. That's not my area of expertise. What I'm good at is taking people in a controlled setting, doing long term fasting, doing it safely and effectively. And particularly in treating the conditions that we're commonly working with, the diabetes, the hypertension, the autoimmune disease and lymphoma.

Or with healthy people, and I think that's who gets the best benefit from moderate term fasting. This five to 10 days of fasting in healthy people that do it periodically because they want to stay healthy, and end up living a long life and having a good death when they go to sleep and don't wake up. I could be wrong about that, but that's one of the studies we're starting next year, is that intermittent fasting every day, and then occasionally, a longer term fast in a restful state is going to actually help us keep people alive the longest time possible.

Dave:

I believe you're 90% right on that. And I want to see if the study [crosstalk 00:50:30].

Alan:

I was just wrong about the coffee, right?

Dave:

No, no. This is not about the coffee. Here's the caveat. And this is something that I've really looked at over the last 10 years, because intermittent fasting has been a core part of The Bulletproof Diet. The book came out in 2014 but I started publishing it in 2011. And what I find is that, especially people who have a lot of weight to lose, who haven't done long term fasts like you do at your clinic, if they start doing intermittent fasting every day, they feel amazing for the first couple weeks. But then, and women hit the wall first, they typically say, "Well, my sleep quality just started declining, and I don't know why. And then my cycles off, and then my hair starts thinning." And it usually takes about six weeks of every day intermittent fasting, and usually they'll say I feel so good, I'm just going to go to one meal a day.

And what I found is that, especially for women, but also for men with a lot of weight to lose intermittent fasting, three days, five days a week, but then having a morning breakfast, in my experience, you would want a higher protein, higher healthy fat, not higher any fat breakfast, but maybe you could do it with a high starch, low fat approach, it probably would work. But you do that sometimes partly to keep the metabolic flexibility high, but also because fasting is a hormetic stressor. And I think they just get overstressed until they become acclimated to fasting, and then they can start doing everyday intermittent fasting.

Alan:

Right. Remember, though, that anytime there's rapid weight loss, there's hormonal changes that whether it's pregnancy, okay? Or whether it's fasting or if you increase activity significantly. Anytime there's rapid weight loss, there are changes and that you may be right, these are may be neuroendocrine remediated radars that associate with temporary hair thinning. You don't lose any follicles, what's happening is you're under nutritional stress, the body affects the hair growth, there's some conservation, everything comes out together. So there's what looks like thinning, overall hair integrity is maintained if thyroid function is normalized. So-

Dave:

I think it's a cortisol issue. They just-

Alan:

Cortisol's involved.

Dave:

Because that affects the sleep, and then the thyroid. And when the cortisol goes back down, the hair follicles should come back, right?

Alan:

And they do and we see this-

Dave:

But if they just have breakfast every now and then it doesn't happen.

Alan:

A month post long term fasting, you'll see this phenomena frequently when there's been a lot of weight loss. So I think what you're doing is anything you do to modulate how rapid that initial weight loss is, probably modulates hair. I don't know that it's necessary because it's a temporary phenomenon. It's not associated with decreased physiological function, it's just this is one of the things that happens. And it's just initially there's more skin sag until the body's able to recover. There's less of that with water fasting than there is with a high protein diet. So I want to be clear, these higher fat approaches are different than the people that are advocating high protein approaches.

Dave:

High protein is just bad for you, right? I just don't buy that.

Alan:

Yeah, and that's also an area we can all agree. I don't think anybody that's thinking about it is advocating high animal protein diets.

Dave:

There kind of are people are having great results, and they're all in the green zone on the Bulletproof Diet. It's only grass fed, they're eating 35% of their calories from fat, and sometimes a little bit more. But you know what, I fully support going 100% plant-based starch vegan for a month, and go carnivore for a month, right? Those are probably both... In fact, if you did every other ones, there's a really good argument for raising mTOR or lowering mTOR. But I'm pretty darn sure that a very high protein from even grass fed animals or from especially industrial animals, over long periods of time, is not going to be good because it raises mTOR and it stays up forever, you get cancer, you get old, you die, even if you're muscular and ripped a lot of the time.

Alan:

Right. So again, what's good for short term athletic performance, what's good for even maximum athletic performance isn't necessarily what's good for long term sustained health. And that's where I think the research has to really look at now. It's not, how do you get the biggest muscle the fastest? That's certainly one question. The real question is what's going to sustain long term disease free health the longest? And that's where we can certainly debate about what the best strategy is. It sounds like we agree on an awful lot of things. We may disagree on some things, let the research decide ultimately, and then I can come back and say, "See, I was right, and you were wrong," and I'll be happy.

Dave:

I think we'll race and when we're both 100 and something we'll arm wrestle and we'll see. Alan, it's been a pleasure having you on this show, and just so for everyone who's listening, would I do a water fast at TrueNorth health if I had a major health thing?

Alan:

Yeah.

Dave:

The risk reward is exceptionally high for that. Would I stick with a high starch, low fat diet? I've tried that multiple times for my constitution. I don't think it's going to work. But it might work for you, right? And the important thing to learn from anything in any of the Bulletproof stuff I talk about, you got to do what works and what works in the life you live in the body you live in. And there is a path here with long term water fasting, supervised because it's necessary, and eat what works for you, and that's what's most important. So Alan, thanks, man. Thanks for your work. Thanks for [crosstalk 00:55:41].

Alan:

Well, thanks for sharing my message. And I'll look forward to having you come up and we'll do the fast at the center.

Dave:

I think that is going to be fantastic. Of course, we might have to wait till all this COVID shutting everything down for questionable reasons gets finished.

Alan:

I just wanted to mention, if any of your viewers are interested in whether fasting might be relevant to them, we offer a free service. If they go to our website and complete the registration forms. They call in and I'll be happy to talk with them and give them my best opinion about whether fasting might be something that they want to consider.

Dave:

That is, that's a cool, very cool offer. Thank you. And the website is, what is it?

Alan:

Truenorthhealth.com.

Dave:

Truenorthhealth.com. All right, so you guys are all welcome to do that. I would just encourage you to remember that coffee is a whole food plant-based substance that is important for life. And as long as you remember that... I'm kidding. I appreciate our differences. I appreciate your work and thanks for being on the show.

Alan:

My pleasure.