Introduction to Dr. Longo and Fasting

Hi, everyone. This is Dr. Joseph Antoun, your co-host for the Fasting & Longevity Summit. This episode is going to be a very, very special one. Probably one of my preferred, because we have with us Dr.

Valter Longo, who is probably the father of the fasting discipline and the longevity, the new thinking around longevity. And as you know, this is the name of our summit.

Fasting & Longevity. I actually went and asked ChatGPT about who's the number one fasting expert in the world. And Valter Longo was was the first. And who's the longevity nutrition expert in the world?

Also, Professor Longo was the first there. So today we have a very special guest. You're going to listen from from the source, from the most scientific authority in the field.

And we're going to discuss how, why fasting is the cornerstone of longevity. How we were able to discover the fasting mimicking diet, meaning how we eat and get the benefits of fasting.

And then what is the latest on the fasting Nutrition for longevity and fasting nutrition. Part of food is medicine impact or support for patients with diabetes and or cancer.

Dr. Valter Longo Thank you very much for your time today. Well, thank you. Thank you for having me. I appreciate it very much so. First, why why fasting is is a big pillar of longevity.

People always asking, what is that interconnectivity? Why is it so special for for longevity? Can you clarify that concept for us? First of all, I always say that fasting doesn't mean anything.

It's like eating can be good, bad or neutral. So people shouldn't think that just because they fasts somehow that that's is magic and it's going to work no matter what.

And so I think that the there are lots there are some ways to fast and and that fasting has to be personalized, you know, in most cases, there should be a health care professional guiding that.

And if it's done correctly, I think that the the effects can be tremendous. And most of it seems to have to do with the ability of these periods of fasting to clean up and use a lot of damage components.

But maybe even more important than the clean up is the regeneration part.

Why Fasting Supports Longevity

So so I think for the past 120 years, the aging field is really focused on on calorie restriction and restricting things. But I think that we've sort of try to push the the second part, which is dairy expansion, right.

You restrict the calories and you shrink. And most organism this happens in probably all organisms that fast for long enough. But then the most interesting part and so lots of interesting things happen like autophagy during the shrinking and lots of killing of damaged cells as we've shown for cancer cells out of new cells, etc..

But then the re-expansion is an opportunity a to reprogram. So. Yamanaka factors and these factors is epigenetic changes that occur on one side and the other side.

STEM cells get activated and they give an opportunity to many organs and systems to re-expand, but they do so using embryonic development like programs.

So now and that leads to rejuvenation. This is very, very clear in most studies, in our studies and studies of others. But now we're starting to see evidence for for the human body doing the same.

And is it also a metabolic benefit when when, you know, some 80% of Americans are little bit struggling with weight with the latest statistics are showing 90% of all of us have certain metabolic issue beyond that cellular autophagy interest on the rejuvenation and the resurrection you talked about.

Are there benefits we're seeing with fasting on metabolism in general? Yeah, I think that lots of the benefits having to do with insulin resistance and just functionality have to go back to the same mechanism that I just described.

So the major part is still about rejuvenating systems and resetting the system. And this is why the great majority of 20 year olds, even the ones that are overweight and obese, they tend to be still okay, right.

Not all of them. Some of them can be diabetic in their in their teens. But I think the majority, they can still be functional enough to to deal with to deal with overweight and obesity.

So a lot of it still has to do with if the system is young and highly functional, you're probably going to be okay even with the excess weight. But then of course, the the nice part about the fasting re-feeding if done correctly, right if done for five days and then the re-feeding period last at least a month. Now the body goes to the fat, burns the fat first and it temporarily shrinks the lean body mass the muscle, but then it re-expands that.

And and so this shrinking re-expansion is probably what's so important also to just get rid of fat and not the muscle. And that's exactly what we see.

And now this is very clear in both mice and humans. And I think this is one of the impressive things that I that I discovered in my fasting journey and and with the fasting-mimicking diet we'll talk more about is, you know, chronic calorie restriction have a little bit failed on the muscle you know, and ends up end up you end up losing muscle and now we have the semaglutide a big craze also where we're seeing 20 to 30% of the weight loss is coming from muscle.

Could fasting be the secret of sending the right signals to the muscle to rejuvenate and maintain, which is important for subsequent metabolism and longevity?

I think that's clearly the way, So when we're 20, everything is functioning and in most cases the fat is limited to say to less than 20% of body or the body composition is fat.

So I think as long as we go back to the function, I mean, the best way to do it obviously is to go back to the the turning the multiple systems to be as young as possible and at the same time reducing the fat back to a normal level.

And and obviously there is no better way than that eating the fasting, mimicking diet. And the reason is that it doesn't it uses what I call 3 billion years of research and development to fix the problem rather than trying to interfere or or activate GLP one, etc., etc..

So, so I think that the FDA system is great, but at the same time is short term. So it's just looking at, okay, let me solve a problem for three months, six months, a year, and in fine you can solve a problem for a year.

But I think we look at it from how can I make you live to 110 healthy? And that's a it's a much, much more difficult problem to solve. Right? So short term, you can solve things in a lot of ways.

Some are good and some are bad and some are really bad. And the long term, it just really takes a lot of aspects to make somebody live to 110 and healthy, right.

So when you intervene with the fasting-mimicking diet and re-feeding it, it looks like there's so much functionality improvement and reduction of risk factors and now soon enough will be published on biological age, etc.

And but really it's hard to imagine that we drugs, right?

How the Fasting-Mimicking Diet Was Developed

Even so now we see that GLP one, we see the initial problems and there's a lot of problem including the muscle loss. But I think as we get to five years, ten years of millions of people doing it, we're probably going to see much more problems.

And as it is, it is standard and common for for drugs that interfere or activate specific pathways. We have mentioned a couple of times the expression fasting-mimicking, diet and and you are you and the University of Southern California, the Longevity Institute.

And and now I think 18 other universities have tested the fasting-mimicking diet on different conditions. But can you explain to us from a high level, how is it possible to fast?

I mean, the oxymoron fasting, mimicking diet. So we're eating and yet the body thinks we are fasting. Can you talk a little bit about that discovery and then we want to address a little bit the benefits coming from it?

Yes. So maybe around 2010 or so we were testing water only fasting with cancer patients at USC Norris Cancer Center And and we were thinking, of course, that the cancer patient is highly motivated.

They're going to do it. But it turns out that it wasn't the case. They they struggled and the oncologists were not happy with it. And the patients were not happy with what it only combined with chemotherapy in that case.

And so so it was then we went back to the government, the US government and basically the government funded research to for the identification and testing of diets and mimic fasting.

And that's what we called the fasting diet. And so we had been working by that time for many years on which ingredients activate the pro-regime pathways, which ingredients activate or block the regenerative pathways, etc., etc., the perfection patterns.

And so the fasting making diet was based on and coming up with a formulation that would be viewed by cells and assist and organisms as water always fast so they get to eat.

But the effect will be very similar to what exactly. And we will actually quantify this by looking at IGF one, IGF one glucose ketone. But these are like classical markers of fasting responses in many organisms, right?

So yes. So then, you know, for example, ketone bodies, if they go way up, then that's a good sign that that means that the body is into a fasting response mode.

Now, we also we're worried about how long term consequence is. And so that's why we decided not to exaggerate with these peaks of fasting response. So we wanted to to have a fasting response, but we did not want to exaggerate.

We now want people to go, yo, your extreme fasting response and back to lots of food data. Because of course it is really not no negative data that I know about this, but I think it was very, very important for us to design it in a way that it would be difficult to imagine.

Even after 20 years of doing this at the right frequency, somebody's been hurt by it. And really, that was the the number one goal. Let's make sure that it's designed so carefully that nobody does worse.

And then, of course, we see incredible benefits with the use of the fasting and we can. In I remember well you can if you were studying the nutrient what we called nutrient sensing pathways, how the cell senses nutrition and how the systems with insulin and IGF get recognition of food and the FMD or the fascinating, fascinating that was designed to nourish the body, why not trigger the recognition of the systemic and the cellular way?

And this is how it mimics the benefits of fasting, while, as you mention, makes it more safe and compliant to do. Yes. So basically the body during fasting understands having lots of fasts broken down and and so and so fat generally does not interfere with the fasting response.

So if only fat is coming in, that's, that's okay. Now sugars and lots of different carbohydrates and proteins and especially certain amino acids are can block or dampen or reduce drastically the fasting response.

Right. So then the challenge was to come up with so many calories to be reasonable for a medical doctor to feed to their patients, but also to be reasonable for the patient and at the same time have ingredients that would not cause insulin to go up were not cause glucose to go up, would not cause IGF one, these growth genes to go up.

And yeah, so that's what was achieved with the fasting making diet and, and in some cases again and we did not want to overdo it, so we were okay with the ketone bodies getting to a certain point, but not too high with the glucose getting lowered was a good point, but not too long.

And the same thing with IGF one and same thing with with ketone body. So those are the four critical bodies, glucose IGF one and IGF one. In a sometimes called a FMD like funded fast.

Right. Because when you do only water fast here is a price of that is not only benefits as you mentioned, we start talking sometimes there's disadvantages of water fast, whereas with the FMD, the consumer or the patient are getting macros, they're getting carbs, they're getting proteins.

And sometimes we get ask is, is, is with the FMD give a fractional benefit of fasting or actually in some cases actually is better than water fast. Have we studied any of the effects of potentially fasting fasting with food the FMD fasting versus water fast.

That we we published lots of studies where we compare them and in some cases if you look for example of cancer in most of the papers where we compare fasting in guys that were only fasting, they're comparable.

But in other cases, for example, in gastrointestinal inflammatory diseases, we saw the, the fasting making died beating the, the water only fasting and we concluded in that paper that this is an inflammatory bowel disease paper.

We concluded that the ingredients so that the fasting making died from the time I developed that in my group developed that we wanted to combine the the high the longevity diet right so that the nutrition is from the longevity zones of the world, those that are uncontested problems with the food, with fasting mimicking.

So we want that to have fast immunity properties and then peak all the foods that almost everyone will agree.

FMD vs Water Fasting and Safety

Yeah, this is a good food and it's probably going to help people live longer and there was probably good a good idea because it turns out we weren't even thinking about it, to tell you the truth.

But it turns out that these ingredients serve that prebiotic feeding the lactobacillus, bifidobacteria and different bacteria species that are associated with anti-inflammatory effects and improvements in the in the gut function.

And and so in that case the water only fasting to increase the weakness of the gut and the fast even we did decrease the leanness of the gut and in the first meeting that it was much more effective than water only fasting in India improving that in reversing the symptoms of IBD and some the colitis in Crohn's essentially the mouse mouse model of it.

It's amazing. So I want to transition into talking about who should do the fasting, mimicking diet, what, what have you or your partner universities tested or we've heard you mentioned to get started the discovery started with shifting from water fasting to fasting with food and cancer.

You mentioned diabetes and so the resistance you mentioned IBD, I want to start first with with longevity. Say, you know, I'm I'm a 45 year old male or female and I listen to this conversation.

I'm listening to this summit in general, and we're talking about fasting for longevity in the fasting mimicking diet. What would you advise for longevity?

Say, I don't have a health condition. What what would you advise that? A profile such as that with how many things to do with when to do it, etc.. So as we are aging, lots of things, whether it's white blood cells or muscle cells or liver cells or liver fat, and there's a lot of things that start accumulating or becoming dysfunctional, become dysfunctional.

We don't think about it. But the I always saw two slides at the beginning of almost all my talks and it showed the number, the obesity and smoking is a major risk factor for cancer, cardiovascular disease and Alzheimer.

And then I saw in the next slide how they compare with 30 years of aging and they almost disappeared. Right. So smoking and obesity as risk factors for all of these diseases, they disappear compared to 30 years of aging.

So treating the aging is the most important of all. By far, by far. It doesn't mean that that's always the case. You know, people can be young and have problems, but if you have to pick one thing and one thing only, you want to keep people young, as young as possible.

And yeah, so I think that's where the fast the American diet does lots of lots of jobs. Right. So one job, for example, reduces the white blood cells temporarily smile, small reduction, then bring them back to the normal level during the receding insulin sense of that.

So insulin in the people, in the patients where there was insulin resistance and high glucose level and then slower. But in those at very low glucose level, it tends to make it higher, right?

So somebody we've seen lots of patients where very low glucose levels and probably not healthy. Right. And it may make a higher rate. So you go from 55, the safe passing vehicle to 75.

And 75 is probably a much better glycemia than 55. Yeah. So I think that is this ability to to basically reset multiple system as organs and making sure that they are now able to function as they should.

Right. So it is the first time in thousands of years of of human existence where we eat all the time. Right. And then in the last. So it was already bad I think in the twenties, but then it got worse and worse and worse.

And now it's ridiculous. And with 75% of of Americans overweight and obese and nearly 60% now of Europeans are overweight or obese. Right. So this is really a pandemic. And and interestingly, nobody's doing anything about it.

And and I think fasting, mimicking, diet need to be at the center of that. And now why do I say fasting? Maybe they're not fasting because, of course, we are big proponents of these 12 hours a day of fasting rates of eat for 12 hours, fast for 12 hours.

There's clearly a very you know, it doesn't cost anything and everybody should do it. But then as you try to compete with the efficacy, you know, of drugs, they can with probably about a lot of drugs, do work for lots of things to do.

Then I think, you know, you have to standardize, right? So you have to standardize it and you have to let hospitals and universities say, I'll test that.

You know, for example, Heidelberg University and they test the fatty making diet and diabetes patients. Now, I think they they were very they were not trying to prove that the FMD worked.

And so they compared it with the Mediterranean diet.

Longevity, Biological Age, and Frequency

And it turns out that five days a month of Mediterranean diet, there is absolutely nothing in five days amount of the fasting diet as a tremendous effect that diabetes patients.

So but I think that they would have been happy to show that the Mediterranean that working day didn't work in itself. So I think it's very important to standardize it and then let everybody test it.

And, you know, so far the record has been remarkable. I'm very surprised. I mean, we would have thought there would be a lot more negative results. And and so far, the great majority of the trials have been positive, whether it was cancer, diabetes, pre-diabetes or inflammatory diseases.

And, well, soon enough, we'll have the data and assignments. So we'll see what. And I want to get into those why somebody with any of those conditions would consider the fasting.

But before we conclude the longevity part, due to commend the people, how many times per day, per year and I heard you talk it's a five day fasting mimicking diet.

So how many times somebody an average the average person should do with per year? So I think that is the average person for about three times. And and so in the diabetes trials that that of course they start mostly obese and lots of problems.

So they do it once a month for six months and or 6 to 12 months. And then they can go down from there and that's the idea. Right. So even if you start with diabetes and you have to do it once a month being followed by your doctor, now that the the idea is year or two, maybe you do it six times in year three, maybe you do it three or four times and that's your maintenance, right?

And that's what you stay with. But I would say, yes, maybe three times a year seems to be a very good way to go for most people. And that's really five days every four months.

So this is basically 15 days only out of the 365 days that that an average, you know, let's say healthy. And then we can we can always define healthy.

What that means would be it would be a good average height. It where their studies are in the bio age like what does it do if if I if if I would have benefit from what you mentioned which is I want to reset my metabolism, I want to help my cells go through autophagy or restoration as well.

I want to try to get my body a little bit biologically younger because the younger me is that little bit you away from the onset of the conditions. As you mentioned, what do I expect?

What do I expect from it from a biological age? Or did we did you ever test or simulated? What would that mean? Yes. So now we have three trials where where we measure or we're measuring biological age.

And then the first two trials was a blood by age measurement. And in the latest trial, it's going to be telomeres, be genetic. So we'll see what happens.

But certainly we we suspect that biological age would be reduced in people that do enough cycles of the first thing we can do. But we have to wait and see.

But every indication, right. So when you see IGF one being lower than cholesterol, being lower than blood pressure being lower, and fasting glucose mean lower than inflammation.

We I mean, it's hard to imagine all of these changes occurring in the absence of the system being younger and more functional. It's possible, but I like it.

Okay. And well, make sure to follow up with you when when the results are out and published, because this is the I know that the fast significant data was the only or probably one of the first, if not the only, even technology, nutrition technology that was awarded the patent on longevity.

So that would be a great a great fit to show clinically as well the results. So we'll we'll do a follow up with you at some point to show that for everyone who wants to go deeper into what Dr.

Long is talking about, that the longer has the longevity of Diet Book, which talks about the fasting we're making diet, but also what to eat every day.

And it was a big international bestseller. You can you can buy it on any of the online platform, the longevity diet, and you will get a detailed perspective on why fasting, why fasting, nutrition diet.

There's a chapter on health conditions as well to understand how to do it and how to apply it. Today, we're going to give you almost the summary of it so would know for the I do Dr.

Long you mentioned cancer that this is how the fasting mimicking they started you mentioned diabetes can you tell us why why a patient with cancer would even consider in doing fasting or the fasting mimicking diet?

Yes, I think that the reason is probably pretty important, right then. And so if you think of a cancer, it is developed. It is started, let's say, from a mutation and develop from that mutation in the presence of lots of food.

Right. And the great majority of people, as we say in so much and and so in the evolution of a cancer, it always had excess of everything, lots of glucose, lots of sugar, lots of amino acids, lots of proteins.

And so when when that's taken away, we now very clearly show over and over and over the cancer goes into an emergency mode right in. And people have this illusion that fasting can cure cancer.

Well, I really don't see that. What we see fasting and fasting making diet do is put the cancer in an emergency mode. But the important, very important thing is when it gets into these emerging emergency mode, it tends to rely on very few systems and pathways, what we call pathways.

So there is now a very few genes they are keeping their are essential to keep that cancer cell alive. Now the drugs can come in and they can do a very good job of blocking those.

Right. And so we've shown that for hormone therapy, for chemotherapy, for kinase inhibitors, for immunotherapy. So when you combine it now, all of a sudden this join joining forces is extremely effective in the mouse.

And now we're starting to see the data in humans are very much in agreement with that in mice and in it makes sense, right? Because unlike most therapies, there is just a fundamental reason why they should work.

So be very it provided that we can match the fasting response in the mouse. It's it's almost it's extremely unlikely that all of a sudden it's going to stop working in humans.

Fasting-Mimicking Diet for Cancer

It may not work in all cases, but it's going to be a matter of finding so out way revolutionize the environment of a patient so that that cancer cell, no matter which cancer cell it is, struggles and then with the standard of care drugs together with the standard of care drugs, then you can kill them.

All right. Kill all the all the cancer cells. Right. And so we see that fasting mimicking, diet, maybe putting at least, you know, in the early, early stages by putting the cancer in the cancer treatment in the category of antibiotics.

Right. So so it's so wide acting together with so the drugs plus the fasting making that there's so wide acting, there's going to be difficult, as you know, for the antibiotics and bacteria.

It's difficult for the bacteria to escape. Sometimes they do. But if you are if you take advantage of lots of different antibiotics, they work for the great majority of people.

And that's where I start seeing the least in the laboratory where we start to see this kind of a potential. Right. That that we can get them. All right.

Maybe not all of it, but we can get the great majority. So, I mean, it's still, you know, years away to two of clinical trials, but believes that there's that potential right then that maybe this that we just say that there's it's a high potential and and we just as to be demonstrated in the in the clinic.

And so that Columbia you're saying it's not about fasting or fasting unite alone you combine them with the standard of care and the fasting may be interesting sensitize it puts the cancer into a difficult situation that then it sensitizing it when the intervention is coming in to hit it and potentially could head it even stronger.

Yeah, it makes the cancer dependent on a very few things. Right. And, and also and probably more importantly, it doesn't just make so we look at a cancer, we think and I think pharmaceutical companies think of a cancer as one.

Right. And so you go to the FDA and you're thinking, I'm targeting the major cancer. I'm not targeting the 5000 to 200 additional cancer that are within the cancer.

Right. It's impossible. You can't go after all of it. Right. And that's the power of the fasting, mimicking that. It's targeting all of it. Right. Why?

Because it makes it so difficult to escape in resolve all the problems caused by so low energy F1, no glucose increasing eaten by these decrease in leptin, decrease in insulin.

So all of these changes now all of a sudden are very difficult to overcome, especially when the immunotherapies have it, when the chemotherapy is there, etc..

So, so yeah. So that's, that's, that's the key is going after the major cancer, but it's also making it difficult for you, difficult for the escape, for the resistance cells.

Right. So and those are the ones that usually kill patients, the one they become resistant. So hormone therapy, for example. Yeah, works for a year or two, then the cancer becomes resistant to the hormone therapy and then the patient is in trouble.

And the job, what we've shown in mice, if you have the standard two drugs of hormone therapy and now in mice. As for humans, eventually the cancer adapts and starts growing.

But if you have this acid making diet now, that never happens. And the the cancer goes down, down, down until you see cancer free survival. And yeah, so I think that's that's why it's so the potential is so high for humans.

It's just a question of as I happen for immunotherapy too, to see where there's a work and how do you apply. So that optimizes overall survival, increasing overall survival and progression free survival.

They remember Dr. Augie reported this word of or expression of differential stress resistance. Was it we talked about sensitizing potentially cancer. Is there also any effect on the normal cells of the body when they go into a fasting nutritional state?

Yeah. And so this differential stress resistance and also differential stress sensitization are really key because if you think about maybe all the treatment right now besides a few innovative ones, there are very futuristic, but all treatment with this chemotherapy or hormone therapy or immunotherapy even, it's going after all cells.

Right. This is why there's a lot of side effects even from immunotherapy. So you're basically blocking these PD one PD-L1 dialog, let's say, between normal cells and cancer cells.

And but that can happen for any cell, right. In the case of fasting, mimicking these that this is differential resistance and actually sending the normal cells in the cancer cells in opposite direction.

Right. And this is very well established by us first and then lots of a lot of people. So the normal cells, they know what to do. They they shield the slow down growth.

They stand by and protect become protected. The cancer cells, you know, different degrees. But in most cases they disobey. And and this is the definition of a cancer cell flight disobedience from anti signals and probably fasting and fasting making out of the biggest integral signal and but they don't care and that's exactly what we want them.

Right. So that's how we think that the chemo, etc. hurts them. But also the immune system recognizes that right rebellion may be very well at the center of immune recognition and meaning that now I know that you cannot possibly be one of mind because you just disobeying everything that a human cell knows about starvation or fasting responses.

And like a lot of I know your studies go beyond fasting and fasting nutrition for cancer. This is a lot of important information. And what patients with cancer should eat in between the chemotherapy or the immunotherapy cycles.

And it's a full nutrition for cancer discussion. We cannot cover it today because they were focusing on fasting and longevity. But I just want to give a small secret here to the listeners.

I think you have a book already published in Europe and cancer in Cancer in nutrition. Hopefully it will come to the US. Any expectation when if somebody's listening to us, they very interested in fasting, duration, but also how to eat when you have cancer and inflammation.

What we expect the book to come up. Yeah, it should be within ten months. Right. So it's a sure thing. It's it's already been almost finalizing the in the American the English version and yeah so ten months and but my suggestion is that so I started our foundation years ago the foundation is both in the United States and Europe is co-create Cures Foundation and we have a clinic and the clinic follows the clinics for thousands of patients.

Many of them are blessed about 50% of them are cancer patients. And so I encourage you to encourage people in oncology to contact the Create Cures Foundation and, you know, and, and consider entering the program.

These programs are usually very long so that the idea is can we follow week by week a patient to make sure that whether it's a fast imaging diet or say we also use the ketogenic diet in some cases or the longevity diet, etc., etc., etc., exercise, muscle training.

So we want to keep the patient as strong as possible and keep a lot of this much as law, but not so law to where the patient becomes malnourished and frail.

And yeah, so it's it's extremely difficult and people underestimate how difficult that is. And but we're very happy now to see lots of oncologists and doctors working with us to say, okay, they do their their job and and we, we do ours.

And together, you know, we're really starting to see in not just in cancer, but but also in cancer, remarkable results that. It's fantastic and, you know, I've heard a lot of patients stories about the clinics and definitely encourage oncologists and patients to consider nutrition and food as medicine.

It's a big supporter and enabler for for for the care before we depart here and probably this is a home run for the fasting nutrition is is diabetes and maybe this is where we have you have a little bit more clinical data on it.

And if you can share a little bit some of the findings on cardiometabolic in general and diabetes specifically with the fasting nutrition. Yes.

Diabetes and Cardiometabolic Benefits

So diabetes, I think now the I so I know of the trials that have been published, but I also know the trials that haven't been published. And I would say that that's the one that we would be shocked to to to see a reversal of what we already seen in hundreds of patients.

So it looks very, very good. You know, it looks that patients that do 6 to 12 cycles month recycle, fasting, making diet, see a regression of the disease.

And in the absence of other interventions now in the clinic, we combine it in this lifestyle programs and and we see even better effects right now because we can sort of customize the every day diet plus the fasting.

And so we see even the better effects. But yeah, so reduction of 81 C without reduction of lean body mass unless the FMD is combined with drugs, then we see lean body mass reduction.

So yeah. So then but for the incredible differences are that when the FMD is done alone, we don't see that. And that's like trial number four or five that we see improvements in, in glycemia in the glucose level and insulin levels even C But no changes in lean body mass in muscle mass.

And so so we suspect that because we only see those changes when the drugs are used that most likely it's the drugs or you know, it's a combination with drugs that causes the problem.

It doesn't it's not big problems. Right. But but I mean, yeah, that's really what you want. Don't touch the muscle mass, maybe rejuvenate or have improvements in the muscle mass.

So don't touch. It's absolute composition and weight and potentially improve its function. And and then have the metabolic or the cardiometabolic improvements.

And, and we see, we see pretty regularly all of that which go from, you know, the insulin and Glycemia, H1, C, etc. all the way to blood pressure, cholesterol in C-reactive protein, etc..

We don't always see effects on cholesterol and blood pressure, but say the degree majority of the of the trials we saw that in a few we didn't see, for example, when we combined the FMD with hypertension drugs, we did not see the hypertension being lowered.

But of course we already lowered by the drug, but we didn't see a further reduction. So yeah, but in general we consistently we see effects on lots of these markers.

Actually in a typical diabetic type two patients, they come in, in 2 to 3 drugs. What is the protocol, what is the fasting when the interest in protocol that has been the most tested for those people to go on.

Yeah. The way to go I think. Well, we followed dozens of patients at the clinic and the way to go is to personalize. So for example, I always tell the story of a doctor that had diabetes and hypertension and tries lots of the drugs GLP one and tries them all right then.

And nothing works. And, and people are very excited about these drugs but the minority or you know, I don't know if it's a minority but certainly the group of people for which it doesn't work.

It's it's a big it's a big group of people. Right. And but this doctor comes in desperate, got diabetes. And and so it does, I think, five cycles of the FMD in a year and a half.

What for, first of all does nine months of the longevity diet. Right. And I'm telling this story because I think is very representative of what we see in the trials and what we see in lots of patients.

So so there's nine months of the longevity and it has and this voluntary diet is like, okay, now slash Mediterranean. It's a very tough, you know, everyday nutrition for longevity.

It takes from lots of different diets, but try to optimize it. But even after nine months of that, there's improvement, not big improvements, a little bit of weight loss and in a few things, but the glycemia still up there is still, you know, in the diabetic range.

And so then we start with the fasting Mickey diet and then we you see the when see collapsing. And and so he does it five times and so I think it was a process of about two years.

And then this doctor goes from lots of drugs to no drugs, no diabetes, no hypertension and yeah, so I think that that's what we see in the clinic. If people are working with us, we have to personalize it.

But you know, within a couple of years, the majority of them, we can get them back to to health and not drugs. And this is I mean, it works for all of them, but it works for the probably the majority of patients.

And and in the trials, you see 50 to 70% of patients regressing. Right. And that's so it's very much consistent in regressing just with the FMD so. So now if you have that personalized touch and and we don't revolutionize diet.

So in the clinic we're basically saying, okay, do the FMD and then can you make these small changes? And those are the long lasting ones, right? So we we want people to make small changes.

They can live for the rest of they can live with for the rest of their lives and then use the FMD to get into to drop in all those risk factors and and markers for for diabetes and pre-diabetes.

And Dr. Longo I know there's trials happening on autoimmune and Alzheimer's, I'm not gonna get into details today about those. The focus was on longevity and maybe what already we had clinical trials on like cancer and diabetes.

Before we depart here, any final words, any final recommendation to those listening here, maybe for the first time interested in fasting and longevity, maybe the first time being exposed to why is it important to do a fasting nutrition?

What would you recommend for an average person? What could be the ideal pattern of fasting? I think you mentioned the 12 hours. You mentioned the FMD.

How can you put it together as a final conclusion to the listeners today. That thing that the I mean, first of all, I hope that we get the medical community engaged, right.

So the and not just the doctor also the nutritionist, the dieticians, the nurses and all of the health care professionals.

Final Advice on Fasting and Longevity

And I really think that we need that minority maybe in the beginning to say, okay, we could do this with lots of drugs, but can we just can we focus first on getting all the patients that we can bring back to full health in a younger age, biological age?

Can we just focus on that? And then and I agree, if we do that for two, three, four years, as we do in the clinic, sometimes we fail and we say, hey its not working on this patient.

So now, yeah, that's where in the drugs should come in or where the drugs should be. The only, the only intervention taken. But yeah, I think for the first two or three years there should be a very coordinated effort from the healthcare professional and from the patient to say, okay, I need to go back to low cholesterol, low blood pressure or normal cholesterol, normal blood pressure, normal glycemia, normal weight, cognitive function that are, you know, as high as possible and inflammation should be very low or absent, etc., etc..

And, and that's really it's not going to happen with 20 drugs, right? You can go after and this is why they're not the typical 67 year old is taking four or five drugs.

And and by the time Americans are 45, the average number of drugs for chronic diseases, chronic conditions and drugs is two or more. So, yeah, that's that's what we're facing.

And I really think it's there is a an emergency to to act and find the professional that says, okay, I'm, I'm I'm going to focus on that from now on. I'm going to focus in making people younger, healthier, and keeping them like that so that we can see them optimize their potential to make it to 100 and maybe even 110.

And I think you have a log this for humanity right before it was sick care and drugs. Then when we discovered we as a physician community that okay metabolic and lifestyle was is behind a lot of the diabetes now a little bit the type 3 diabetes, the Alzheimer's we said okay, maybe dieting, right?

Chronic diets, the diets came in. They're difficult. They impose on lifestyles. They don't get you younger. They slow down a little bit. Your metabolism and they're much better than eating wrong.

Don't get me wrong on that. But you unlocked a way to hit getting the body biologically younger, protect that lean body mass and then deal with with the root cause rather than the symptoms of the conditions happening today.

And this is why the fasting is in the last seven, eight years. And we hear a lot of doctors, a lot of clinics excited in the USA alone, over 15,000 clinics, you know, working with the fasting mimmick nutrition, that excitement is coming from unlocking aging.

It's all these four killers we talk about the aging, protecting the organs of longevity, helping their cells and dealing with the metabolic issue without having to impose on the consumer or the patient and lifestyle change from day one that is drastic enough that they kind of default and leave and then feel that chronic learned helplessness that we see with most most patients.

So I want to I want to thank you very, very much, Dr. Longo, for your time today. This has been an unbelievable discussion. Pretty sure we're going to come across again In the future maybe, maybe May, June, the cancer book will be out and the new trials on the on reversing bio age would be probably published we can have another discussion about the FMD for those health conditions.

I appreciate you very much today. Thank you. You're welcome.