Introduction to Dr. Valter Longo and fasting

Hi everyone. This is Doctor Joseph Antoun, your co-host for the Longevity Summit. This episode is going to be a very, very special one. Probably one of my preferred because we have with us Doctor Valter Longo, who is probably the 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 longevity. I actually went, 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 the source, from the most scientific, you know, 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 fast mimicking diet, meaning how can 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 again. Appreciate you very much. So first, why fasting is it is a big pillar of longevity.

People, you know, always asking what is that interconnectivity? Why is it so special for longevity? Can you clarify that concept for us? Yeah. 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 fast, somehow that that's got its magic and it's going to work no matter what.

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

And if it's done correctly, I think 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 lots of damage components.

But maybe even more important than the cleanup is the regeneration part. So. So I think for the best 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 the expansion, right? You restrict the calories and you shrink. And most organisms this happens in probably all organisms that fast for long enough.

Why fasting supports longevity and regeneration

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 to new cells, etc..

But then the expansion is an opportunity 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 respond. But they do so using embryonic development like programs.

So now that leads to rejuvenation. This is very, very clear in mouse 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, you know, 73% of Americans are a little bit struggling now with weight with the latest statistics are showing 90% of all of us have certain metabolic issue beyond that, cellular autophagy, intracellular rejuvenation.

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

So the 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 it, 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 nice part about the fasting refitting is done correctly, right?

If done for five days and then the refitting period lasts 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 responds that and and so this shrinking re expansion is probably what's so important also to just get rid of fat and not a muscle. And 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 discovered on my fasting journey. And with the fasting mimicking diet.

We'll talk more about is, you know, chronically 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 seemingly tied a big craze also, where we're seeing 20 to 30% of the weight loss is coming from muscle cat 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 clearly the way. So when we're 20, everything is functioning and in most cases the fat is limited, let's 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 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 I think the first thing that 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..

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

And and 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 but long term, it just really takes a lot of aspects to make somebody live to 110 healthy.

Right? So when you intervene with the fasting mimicking diet and we feeling it looks like there's so much improvement and reduction of risk factors. And now soon enough will will will be published in a biological age etc..

And but really it's hard to imagine that with drugs. Even so, now we see the GLP one, we see the initial problems and there's a lot of problems, including the muscle loss.

But I think as we get to five years, ten years or millions of people doing it, we're probably going to see much more problems. And is it a standard in common for for drugs that interfere or activate specific pathways?

You have mentioned a couple of times the expression fasting mimicking diet. And you are you an inverse of sunny California, the Longevity Institute. And now I think 18 other universities have tested the fasting mimicking diet on 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 yet the body thinks is 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 and USC Norris Cancer Center.

And we were thinking, of course, the cancer patient is highly motivated.

How the fasting mimicking diet was developed

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

And 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 making diet. And so we had been working by that time for many years. And which ingredients activate the provision pathways, which ingredients activate or block the regenerative pathways, etc., etc., the protection pathways.

And so the first thing we conduct was based on and coming up with a formulation that would be viewed by cells insist and organisms as water only fast.

So they would get to eat. But the effect will be very similar to what really fasting. And we will actually quantify this by looking at IGF one I, GFP one, glucose and ketone bodies.

These are like classical markers of fasting responses in many organisms. So yes then for example ketone bodies, if they go way up then that's a good sign that that means that the body is into a fascinating response mode.

Now we also we're worried about health long term consequences. And so that's why we decided not to exaggerate with these peaks of fast and response. We wanted to to have a fasting response.

But we do not want to exaggerate. We do not want people to go through your your extreme fasting response and back to lots of food, you know, because of course, there's 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 being hurt by.

And really that was the 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 I remember well, you can you were studying the nutrient, what we call nutrient sensing pathways, how the cell

senses nutrition and how the systems with insulin and IGF get recognition of food.

And, and the fed or the facility was designed to nourish the body while not trigger the recognition and the systemic and the cellular way. And this is how it mimics the benefits of fasting, while, as you mentioned, makes it more safe and compliant to do. Yes.

So basically the body during fasting understands having lots of fast broken down and and so and so fast generally does not interfere with the fasting response.

So if only fat is coming in. That's okay. Now two girls 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 will not cause insulin to go up, will not cause glucose to go up, will not cause I want this growth genes to go up.

And yeah, so that's what was achieved with the fasting making diet. And and in some cases again 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 lower to a certain point but not too long.

And the same thing with IGF one and same thing with with yes ketone body. So those are the four ketone bodies glucose IG, IGF one IGF. And I sometimes call the FM D like a funded fast.

Right. Because when you do only water fast you're there's a price to that. It's not only benefits as you mentioned, when you start clogging sometimes it'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 in. Sometimes we get asked is would the FMD give a fractional benefit of fasting?

Or actually, in some cases it 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.

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

But in other cases, for example in gastrointestinal inflammatory diseases, we saw the the fasting making diet building the the water only fasting. And we concluded in that paper and this is an inflammatory bowel disease paper, we concluded that the ingredients so that the fasting making diet from the time I developed a in my group developed a we wanted to combine the high the longevity diet.

Right. So the nutrients from the longevity zones of the world, those that are uncontested, prolonged food with fasting mimicking. So we wanted to have fasting mimicking properties and then pick all the foods that almost everyone will agree.

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

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

And so in that case, the water only fasting increased the leaky ness of the gut and the fast, making that decrease the leaky ness of the gut and in the faster was much more effective than what?

And only fasting in improving in reversing the symptoms of IBD, colitis and cons. Essentially the mouse mouse model. It's amazing. So I want to transition into talking about who should do the fasting mimicking diet, what have

you or your partner universities tested for.

We've heard you mentioning it started the discovery started with shifting from water fasting to fasting with food on cancer. You mentioned diabetes and resistance.

You mentioned IBD. I want to start first with little longevity. Say, you know, I'm a 45 year old male or female. And 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 profiles such as that with the how many times to do it, when to do it. So as we are aging, lots of things, whether it's white blood cells or muscle cells or liver cells or, you know, liver fat, and there's a lot of things that start accumulating or becoming dysfunctional, become dysfunctional.

And we don't think about it. But the I always show two slides at the beginning of almost all my talks initially. The number one, the obesity and smoking is major risk factor for cancer, cardiovascular disease and Alzheimer's.

And then I saw in the next slide. How did they compare with 30 years of aging. And they almost disappear. Right.

Who should use FMD and how often

So smoking and obesity as risk factors for all these diseases they disappear compared to 30 years of aging. So treating aging is the most important of all by far right.

By far. That doesn't mean that that's always the case. You know, people can be young enough problems, but if you had 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 fasting making diet does lots of lots of jobs. Right. So one job, for example, it reduces the white blood cells temporarily small small reduction to then bring them back to the normal level during the refitting.

Insulin sensitized. So insulin in the people in the patients where there was insulin resistance and high glucose level, it tends to lower. But in those that very low glucose level it tends to make it higher.

Right. So somebody we've seen lots of patients where there is no glucose levels and probably not healthy. Right. And and it may make it higher. Right.

So you go from 55 let's say fasting will go to 75. And 75 is probably a much better glycemic than 55. Yeah. So I think that is disability to to basically reset multiple systems organs and making sure that they are now able to function as they should.

Right. So this is the first time in years of, of human existence where we eat all the time. Right. And, and then in the last. So it was already bad, I think in the 20s.

But then it got worse and worse and worse, and now it's ridiculous. And with 75% of Americans overweight and obese and nearly 60% now of Europeans overweight or obese, right.

So this is really a pandemic. And interestingly, nobody's doing anything about it. And I think fasting mimicking diet need to be at the center of that.

And now why do I say fasting making that enough fasting. Because of course we are are big proponents of this 12 hours a day of fasting. Right? So eat for 12 hours fast for hours is clearly a very, you know, it doesn't cost anything and everybody should do it.

But then as you're trying to compete with the efficacy, you know, of drugs that comes with problems. But, you know, lots of drugs do work for lots of things they 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, they tested diabetes patients.

Now, I think they they were very they were not trying to prove that the FMD worked. And so they compare it with the Mediterranean diet. And it turns out that five days amount of data is absolutely nothing.

And five days a month of the fasting making a tremendous impact on diabetes patients. Right? So but I think that they would have been happy to show that the Mediterranean diet worked and they didn't work, you know, so so I think it's very important to standardize it and and then let everybody test it.

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

And well, soon enough we'll have the data on Alzheimer's. So we'll see what happens. 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, do you recommend that people how many times per day per year. And I heard you talk. It's a five day fasting making diet.

So how many times somebody on average the average person should do it per year. So I think that the average person probably about three times. And so in the diabetes trials 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.

The idea is year two. Maybe you do it six times and year three, maybe you do it 3 or 4 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 that's it's basically 15 days only out of the 365 days that an average, you know, let's say healthy.

And then we can always define healthy. What that means would be would be a good average where their studies on the bio age like what does it do if I want to benefit from what you mentioned, which is I want to reset my metabolism on to help myself go through autophagy or regeneration as well.

I want to try to get my body a little bit biologically younger, because the younger me is a little bit, you know, away from the onset of the conditions, as you mentioned.

What do I expect? What do I expect from the from a biological age? Or did we did you ever test or simulated? That means yes. So now we have three trials where we measured or we're measuring biological age.

And in the first two trials was blood by age measurement. And in the latest trial it's going to be telomeres epigenetic. So we'll see what happens. But certainly we suspect that biological age will be reduced in people that do enough cycles of the fasting making diet.

But we have to wait and see. But every indication. Right. So when you see IGF one being lowered and cholesterol being lowered and blood pressure being lowered and fasting glucose being lower than inflammation below, I mean, it's hard to imagine all these changes occurring in the absence of the system being younger and more functional.

It's possible but unlikely. Okay. And we'll make sure to follow up with you when when the results are out and published. Because this is I know that the first thing we can do, it was the only or probably one of the first, if not the only, even technology nutrition technology was awarded a patent on longevity.

So that would be a great, great fit so clinically as well. The results. So we'll we'll do a full up with you at some point to show that. And for everyone who wants to to go deeper into a doctor Longo is talking about, Doctor Longo has the Longevity Diet book, which talks about the fasting mimicking diet, but also what to eat every day.

And it was a, you know, big international bestseller. 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 died.

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 with no further ado, doctor longer, you mentioned cancer that this is how the fasting began die started. You mentioned diabetes. Can you tell us why?

Why a patient with cancer would even considering doing fasting? Or the fast statement making diet?

FMD for cancer treatment support

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

Right. And the great majority of people, as we said, you know, 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. And, and people have this illusion that if fasting can cure cancer, well, we really don't see that what we see fasting and fasting, making diet do is put the cancer and emergency mode.

But the important, very important thing is when it gets into this 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 that are essential to keep the cancer cell alive. Now the drugs can come in and they can do a very good job at blocking those.

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

And now we're starting to see the data in humans very much in agreement with that in mice. And and it makes sense right. Because unlike most therapies.

There is just a fundamental reason why this should work, right. So be very provided that we can match the faster response in the mouse. It's almost extremely unlikely that all of a sudden it's going to stop working in humans.

It may not work in all cases, but it's going to be a matter of finding so out where revolutionized the environment of a patient. So 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.

So so we see the fasting mimicking diet maybe putting at least, you know, in the early early stages, but putting the cancer in the cancer treatment in the category of antibiotics.

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

Sometimes they do. But if you if you take advantage of lots of different bionics, they work for the great majority of people. And that's what I start seeing, at least in the laboratory work.

We started seeing this kind of a potential that we can get them. All right, maybe not all of them, but we can get the great majority. So I mean, it's still a, you know, years away to two of clinical trials, but at least that there's that potential.

Right? Maybe that's that we just say that there's a high potential. And and we just asked to be demonstrated in the clinic. And so are you saying it's not about fasting or fasting alone?

You combine them with a standard of care and the fasting, maybe contrition, sensitize. It puts the cancer into a difficult situation that then it's sensitizing it when the interventions coming in to hit it and potentially could hit 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 when you look at a cancer, we think and I think from a company is 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, 200 additional cancer that are within the cancer.

Right. It's impossible. You can't go after all of that. Right. And that's the power of the fast imaging diet. It's targeting all of it, right? Why? Because it mixes so difficult to escape in resolve all the problems caused by so lower energy.

One, of course, increasing ketone bodies, decreasing lactate, decrease in insulin. So all these changes now all of a sudden are very difficult to overcome, especially when the immunotherapies added when the chemotherapy is added accelerates.

So yeah. So that's the key is going after the major cancer. But it's also making a difference difficult for the for the resistance cells. Right. So and those are the ones that usually kill patients the one that 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 mount and now in mice, as for humans, eventually the cancer adapts and starts growing.

But if you have the fast imaging diet now, that never happens. And the and the cancer goes down down down until you see cancer survivor 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 it happened for immunotherapy to see where does it work. And and audio apply. So that optimizes overall survival increase in overall survival and progression free survival.

I remember that longer you did this word of or expression of differential stress resistance with it. We talk about sensitizing potentially cancer. Is there also any effect on the normal cells of the body when they go into a fasting nutrition state. Yeah.

So this this differential status distance and also differential stress sensitization are really key because if you think about maybe all treatment right now besides a few innovative ones that are very terrific, but all treatment with this chemotherapy or hormone therapy or immunotherapy even is going after all cells.

Right. This is why there's a lot of side effects even from immunotherapy. So you're basically blocking this 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 diet instead this this differential resistance sensitization are clearly sending the normal cells in the cancer cells in opposite directions. Right.

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

They stand by and protect, become protected. The cancer cells, you know, different degrees by in most cases they disobey. And this is the definition of a cancer cell.

Right. Disobedience from anti-growth signals and probably fasting and fasting making that the biggest anti-growth 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 them right there. Rebellion may be very well at the center of immune recognition, meaning that now I know that you cannot possibly be one of mine because you're just disobeying everything that a human cell knows about starvation or, you know, fat responses and longer.

I know your studies go beyond fasting and fasting. Nutrition for cancer. This is a lot of important information on what patient with cancer should eat in between the chemotherapy or the new therapy cycles, and it's a full nutrition for cancer discussion.

We cannot cover it today because they were focusing on longevity. But I just want to give a small secrets here to the listeners. I think you have a book already published in Europe on cancer and cancer nutrition.

Hopefully it will come to the US. Any expectation when if somebody's listening to us today, very interested in fasting, but also how to eat when you have cancer.

Any information on what we expect the book to come out? Yeah, it should be within ten months. Right. So it's a sure thing. It's already been almost finalized in the in the American English version.

And yeah, so ten months and but my suggestion is so I started a foundation years ago and the foundation is bought in the United States and Europe is called Create Cures Foundation.

And we have a clinic. And the clinic follows the clinics of patients. Many of them are listed by 50% of them are cancer patients. And so I encourage you to encourage people and oncologists to contact the Create Cures Foundation.

And, you know, consider entering a 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 meeting diet or say, we also use the ketogenic diet in some cases or the longevity diet, etcetera, etcetera, etcetera.

Exercise, muscle training.

FMD for diabetes and cardiometabolic health

So we want to keep the patient as strong as possible, but and keep a lot of these markers law, but not so low to where the patient becomes more nourished and fail.

And yeah, so it's extremely difficult. And people underestimate how difficult it is. And but we're very happy now to see lots of oncologists and doctors, you know, working with us to 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. Yeah. 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 is medicine. It's a big supporter and enabler 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.

Yeah. So diabetes I think now. 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 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, monthly cycles of the 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 everyday diet plus the fasting making diet.

And so we see even better, better effects. But yeah, so reduction of a one 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 the the incredible differences are that when the FMD is done alone we don't see that. And that's like trial number 4 or 5 that we see improvements in, in glycemic in the glucose level and insulin levels a one C but no changes in lean body mass in muscle mass.

And 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 of 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 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 glycemic a one C except all the way to blood pressure, cholesterol in Syria, T protein, etc.

we don't always see a acts 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 it.

For example, when we combine the FMD with hypertension drugs, we did not see the hypertension being lowered. But of course we already lowered by the drug, but we did not see a further reduction.

So yeah, but in general we consistently CFX and lots of these markers here in a typical diabetic type two patients say coming in 2 to 3 drugs. What is the protocol?

What is the fastest way to get into a protocol that has been the most tested for those people to go on? Yeah, the way to go. I think well, we follow 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. And nothing works.

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

Well, first of all, there's nine months of the longevity diet. Right. And I'm telling this story because I think it's very representative of what we see in the trials and what we see in lots of patients.

So so there's nine months of longevity and it has and this longevity this like Okinawa slash Mediterranean. It's a very tough you know, everyday nutrition for longevity right.

It takes from lots of different diets but try to optimize something. But even after nine months of that there's improvement but not big improvements. Right.

There's a little bit of weight loss in a few things. And but the glycemic is still up there. It's still, you know, in the diabetic range. And so then we start with the fasting mimicking diet.

And then we see the ANC collapsing. And and so it does 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 no drugs.

And this is a mean it works for all of them, but it works for the probably the majority of patients. 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 D. So, so now if you have that personalized touch and and and we don't revolutionize that.

So the clinic will basically saying okay do the FM d 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 with for the rest of their lives.

And then they use the FMD to get into in all those risk factors and markers for diabetes and diabetes. And Doctor Longo, I know there's trials happening on other moon and Alzheimer's.

I'm not going to 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 recommendations to 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?

I think that I mean, first of all, I hope that we get the medical community engaged, right? So the and not just the doctor, also the the nutritionist, the dietitians, the nurses and the all the health care professionals.

And I really think that we need that minority, maybe at 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 and a younger biological.

Can we just focus on that?

Final takeaways on fasting, aging, and longevity

And then and I agree, if we do that for two, three, four years as we do at the clinic, and sometimes we fail and we say, hey, it's now working on this patient.

So now, yeah, that's where the drugs should come in or where the drug should be the only, the only intervention taken. But yeah, I think for the first 2 or 3 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 local astro low blood pressure or normal cholesterol?

Normal blood pressure. Normal. Glycemic. Normal. Wait, a cognitive function. There 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't go after. And this is why the, the typical 6070 year old is taking 4 or 5 drugs.

And by the time Americans are 45, the average number of drugs is 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 act and find the professional. The says, okay, 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, I think.

I think you have unlocked this for humanity right before it was sick 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.

But the type three diabetes the Alzheimer's we said okay, maybe dieting right. Chronic diets, the diets came in there difficult. They impose on lifestyles. They don't get you younger.

They slow down a little bit metabolism and they're much better than eating wrong. Don't get me wrong on that. But you don't lock the way to hit getting the body biologically younger.

Protect that lean body mass. And then the deal with this with the root cause rather than the symptoms of the conditions happening today. And this is why the fasting has emerged in the last 7 or 8 years.

And we hear a lot of doctors, a lot of clinics excited. In the US alone, over 15,000 clinics, you know, working with the fasting, you begin interaction.

That excitement is coming from unlocking aging, because all these four killers that we talked about earlier related to aging is protecting the organs of longevity, helping the cells, and dealing with the metabolic issue without having to impose on the consumer or the patient a 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 for your time today. This has been an unbelievable discussion. Pretty sure we're going to come across again on the future.

The cancer book will be out. The new trials and the reversing bio age will be probably published. And we can have another discussion about the FMD for those health conditions.

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