Introduction and Dr. Antounu2019s Background

Joseph Antoun, it's such a pleasure to have you on this segment of Cancer Breakthroughs. We're going to be discussing something that you guys have heavily researched, and that's become quite important in regards to cancer.

So thank you so much for joining me. Appreciate it very much. And hopefully we're going to bring a lot of information today on nutrition for nutrition and fasting for cancer.

I love it. I love it. So Dr. Joseph Antoun's passion is to enhance human longevity. He's the CEO and chairman of the board of l-Nutra Inc, a unique nutrition technology company leading the longevity and food as medicine markets.

Before taking on these roles, Dr. Antoun was the CEO of Health System Reform, a boutique consultancy aimed at elevating public health through reforming health systems, strengthening health care management and improving health care delivery.

The co-director of the Center for Health Policy at the University of Chicago and adjunct professor of Health Policy at the Institute for Research on Aging.

And a fellow at the Department of Social Policy at the London School of Economics and Public and Political Science. Dr. Antoun founded and served as the editor in chief of the Journal of Health Systems and Reform.

He served as the chairman of the board at the Global Health Spend Policy Institute as a member of Forbes Business Development and as head of Business Development for emerging markets at Eli Lilly and Company.

Dr. Antoun has dedicatedhis professional experience to launching two novel markets, the first in longevity market, whereby he launched the first tested and patented healthy aging product called Prolong.

The second is the food as a medicine market, whereby he launched a tradition for longevity, which is now among the first food ever to be reimbursed by CMS and insurances.

Dr. Antoun completed his health policy, studied at Harvard University Public Health at Johns Hopkins University Medicine and Biological Sciences at St John's University.

He and his Ph. D. studies in Mediterranean and Middle Eastern Studies at King's College. He is married to the loveliest. Carine has three amazing boys and stays healthy by consuming prolonged and walking daily for hours while on his phone.

You. You are an educated gentleman and you have done a lot. I mean, that that that's that's quite a quite a history. And try to try to have luck you I went to med school first and and like many doctors we go there to try to help people stay healthy and cure diseases.

And I figured out I wasn't able to do that for the biggest for diseases like cancer, Alzheimer's, cardiovascular and diabetes. We don't have, in many or most cases, full cures.

And I was like frustrated with that system. So I started my own journey and it's like you see combination of medicine, but then health systems reform and health policy and then coming back to products and technology.

It's my journey to kind of trying to find something to end chronic diseases. And I think we landed on a few good things here. Well, and you work directly with a doctor, Professor Valter Longo, and you've done a heavy amount of

research in this area of fasting.

Valter Longo, Fasting Research, and Cancer Nutrition

Yeah. I mean, Valter Longo, for those, you know, listening to us today, is he go to church a beauty or any other source? He's the number one fasting expert in the world and the number one longevity nutrition expert in the world.

And he heads the Longevity Institute at University of Southern California and has done over two decades of research on nutrition for longevity. If you're healthy, how can I how can I formulate food that help you stay healthy long?

And then he started looking at conditions. If you have diabetes, what to eat to induce remission. If you have cancer, what to eat to induce remission.

If you have Alzheimer's and autoimmune diseases. So it's food as medicine and food for longevity that he started fasting in food because fasting is as important as food.

We're going to talk about this today, but all this is summarized in his book, The Longevity Diet. I strongly advise people listening to us today to buy that book, Amazon or anywhere else.

It's called The Longevity Diet by Valter Longo Will Change Your Life. And I had the pleasure of chatting with him on my radio show a number of years ago, and the research is just tremendous.

And when, as a cancer patient, what your thinking is and what you're told by your oncologist. Yeah, eat, eat, eat. Doesn't matter where the calories come from.

You just need to keep that weight on. And yet here you are then as saying almost the opposite. Here. I mean, cancer patients have a dilemma, right? Because once you have cancer, cancer is a cell that loses, you know, inhibition of stopping replication.

It starts going fast and it keeps growing and then goes everywhere in the body after, you know, getting squeezed locally. And and at the end of the day, it's eating the body's own calories.

It loves cancer, loves any growth factor and any nutrients because it just feeds it. Right. It feeds its growth in. And this is a dilemma because then you see the body getting frail because cancer is eating a lot of the that sources and then traditionally we said okay let's feed this body right like give it high protein let's of it.

But the more you feed it, the more you're feeding cancer. Right. And in and then cancer grows and then this is why we don't get to a cure. And so what we specialize is how can we create what we call differential stress resistance?

How can we feed the body but not cancer? How can we starve cancer before chemo? So we sensitize cancer to chemo and we try to all our science on cancer was trying to a little bit separate what benefits cancer from what benefits the body in fasting actually was one of the one of the major interventions that we saw in mice that did tremendous and cure rates.

And in humans we're doing a lot of trial of around eight clinical trials, trying to look at short term first health outcomes and health benefits and then longer term potential remission.

And and we're seeing a lot of benefits. And I'm happy to explain why and how and how to do it in a healthy and safe way. Yeah, I love that. I had on on my podcast Integrative Cancer Solution.

I was talking to a gentleman that had colon cancer and he fasted for 21 days and it was able to shrink his tumor by 50%. So obviously that doesn't happen with everybody, but it just kind of shows the power of fasting, you know, when when you bring that in as a tool.

So yeah, but, but maybe we talk like science. I mean, there's a lot of anecdotes and stories and it will work for many. It won't work for for others. And I would agree the other side effects on another organ.

So what I would report today is, is randomized clinical trials on cancer and what they're showing. And so that we benefit in as many people as possible and give them solutions they can adopt.

The issue to just as a disclaimer at the start of the issue with cancer is cancers are different. Right. And so what we're going to talk about today would apply to many cancer and specify but there are many other cancers that we haven't tested or that we don't know what applies.

So forgive me if I'm going to generalize a little bit, I'm going to give general concepts, but with a disclaimer that every cancer different and every cancer responds differently.

And that's it. And that's the thing when you're dealing with cancer, obviously it is it is a serious disease. And you need to be under the care of a of a professional medical professional to to support you through that journey.

So this is just to arm individuals with information so that they know where to look and how to how to do things and on their journey. Yeah. And bring it to your doctor to discuss with them what we will discuss today and see if it's going to help you.

So and nothing we're going to talk about is here to promise a cure or promise a full remission, although there's a lot of hope about a lot of benefits that we're studying and so I'll give you an update on the science of fasting for cancer.

Why Cancer Patients Fast Before Treatment

First first of all, why, why, why? We went and we studied fasting and cancer. The number one is, again, cancer. Cancer is the fastest growing organ. Once you have it right, it just wants to replicate the cancer cells.

So it needs food and it needs growth factor. And what decreases growth factors in the body and what decreases food is actually fasting like okay can you fast every day because if you fast every day now you're also shrinking the other organs and your the brain needs to eat and the heart needs to pump.

And so it wasn't practical to fast all the time. Then we started studying, okay, what is the ideal time to fast? And we discover that the ideal time to fast is before the treatment, before chemo or immune therapy for these 4 to 5 days before in why first?

First of all, why before and why four or five days in? And as a disclaimer, we started doing it with water. And water is still too difficult for people to fast on water for four or five days.

And doctors don't like it. It puts their their patients in an extreme situation. And so the nationally sort of health gave us funds to go and discover a fasting mimicking nutrition.

So you're feeding the body for four days while the body thinks you're fasting. This is this is the core of what we have discovered, if you want, for the last two decades.

This is the core of what made our founder and USC very famous and nutrition for cancer. It is discovering this fasting, mimicking nutrition. So anything I'm going to talk about moving forward is not going to be like water fast.

When I say fast for four days, it's a nutrition program that you would eat and it's formulated with precision nutrition to keep the fasting signals under cells.

So why fast? For four days before chemotherapy or immunotherapy or the therapies you're doing? Basically, there's four benefits. You want to starve the cancer.

As we discussed it, when cancer is starved, cancer loses its inhibition, its resistance and its pathways to resist

chemo or immune therapy. So you're weakening the cancer.

Cancer is lost, as in is not fully equipped to resist. And then when chemo comes in or immunotherapy or tyrosine kinase or any other therapies and again, I don't want to generalize, we studied many of them, but not all of them.

Then the cancer is weak and is less resistant to to to to keep all the other benefits which we see with fasting in general doesn't have to be cancer patient is we see a little bit of immune rejuvenation with fasting when you fast you know we see the body washing a little bit of some older immune cells as part of the rejuvenation and part of the autophagy that the body goes through.

And we see the body rejuvenating immunity in mice when we did fasting versus non fasting, we see the cancer infiltration with immune cells is much higher.

And there's now from Italy actually there's human trials showing better immune attack in humans as well when you do the four days fasting, mimicking nutrition before cancer.

So number two is rejuvenated with immunity. So that does its work in attacking cancer. Number three is what we call this differential stress resistance.

When you fast normal cells of the body, they say, okay, there's no calories, there's no push to replicate so we'll hibernate will stay in a in a non replicative format cancer doesn't know how to do that.

By definition cancer wants to grow a cancer cells wants to replicate. So basically you have the normal cells are hibernating of the body and the cancer is keeps replicating when chemo comes in, you know, chemo and many interventions they impact, they kill cells in replication.

This is how they work. And therefore, you protecting the normal cells of the body from the side effects of chemotherapy and you're sensitizing cancer to chemo, then you making chemo more selective to create damage at the cancer versus creating damage across across the body.

So these were the concepts that we we studied. We said, okay, can we sensitize cancer to the treatment? Can we rejuvenate the ME to better attack cancer?

Can we protect the cells of the body? And when you protect the cells, you're by the way, the patient tolerates more of the chemo and can stay at a higher dose or could do more cycles.

And we know this is a very determinant factor to, you know, getting rid of cancer and increasing the chances of remission. A lot of people end up quitting or decreasing the dose.

The doctor has to decrease the dose because of the side effects. So that was the concept behind fasting before treatment. And again, what we test is something called the fasting mimicking attrition.

And in you do it four days before chemotherapy. Now we've started testing or so what a cancer patient should eat afterwards, right. So, so and it's different, right.

With with breast cancer, you gain weight. So you have a lot more leeway than going more restrictive afterwards. In other cancers, you lose weight. So it's not as easy to go restrictive.

But general concepts, especially in breast and prostate and prostate cancer, you end up dying more of cardiovascular long term complication than the cancer itself.

So in breast you gain weight. So also it has that side effects. So these two very popular cancers, the little could benefit from what we studied, which is that just we and before us, even some people started looking at intermittent fasting and ketogenic diet for those for those cancers.

There's one observational trial that was published in 2016 in JAMA Oncology, one of the top medical journals. And it was just observation. It was looking at women with breast cancer who typically stay 13 hours without food.

So they're doing intermittent fasting of 13 hours, not on purpose. It was observational in in in it was enough to decrease the rates of remission, of recurrence.

It didn't change the outcome in lifespan, but it was just that, you know, it's not 14 or 15 or 16. So it'll be very interesting to look into trials on a 16 hour or 17 hour intermittent fasting and see if it makes sense if every day you under feed cancer cancer's negative is not going to, you know, and if you still have some remaining cells that are being well-fed and well pushed every day, that's the concept.

And there's a lot of theories about being more ketogenic with cancer. Cancer doesn't love carbs and proteins and carbs and proteins. They push insulin and IGF, they're growth factors.

So you're getting the nutrients and getting the push to grow. If you go a little bit more on fat, you have less push to nourish cancer and less growth factors in the body and which creates a better a better nutrition environment for the body to still gain weight with the healthy fats very important to Vienna, healthy fats without over pushing the cancer and equipping it for growth.

Yeah. So, yeah, I mean, what you mention is hugely important. So we have, you know, the issue that obviously when we do an oxidative therapy, which is, you know, chemo or radiation, you know, we want the cancer to be as weak as possible.

So if we don't feed it the nutrients in need, then when we bring in those therapies, we're going to impact we can have a stronger kill. And then also what you're talking about and in regard to just kind of autophagy and something that's called immune senescence, you know, where we kind of kill off, you know, some of the immune system components that are not very helpful to allow space to replenish more healthy immune cells to be there.

You know that that's so crucial, obviously, when you deal with cancer and then, you know, like like you're talking about just yeah. So it's these these are these are huge, huge factors.

I mean, you mentioned that there's so so you mentioned three did I missed the fourth one as well? Almost. Maybe so. So the fourth one is decreasing growth factors that push the cancer to grow before was so number one was starve cancer number two was rejuvenate immunity number three was protect the healthy cells versus the cancer.

And so slice cancer and decrease the growth factor of the body as a response to food. So when you eat carbs, insulin grows insulin spikes. And this is a growth factor that cancer loves when you eat protein, especially the proteins.

And that's a big dilemma because proteins have a positive connotation society.

Fasting Mimicking Diet Protocols and Timing

And I see a lot of oncologists, they don't hesitate telling patients eat as much protein and I want to mention brand names, but drink the high protein drinks as well.

And they have they have their rules. If you're take or if you're frail or you know but definitely go plant based, definitely go into low leucine so that you have the proteins that would not spike IGF, I would not over boost cancer.

So the more you eat carbs and proteins, the more you increase postprandial growth factors, which also the cancer loves and will help him strive, will help cancer thrive before the chemo or the or the intervention in it.

So to continue that, it's very important for doctors and patients to start these interventions literally at the beginning and from the first cycle, because, you know, it's a vicious circle, right?

Once you don't protect this, the normal cells in your side effects, cancer is resistance. So you need more. And then you start getting into this vicious circle of the body, getting more fully frail or damage the cancer to surviving.

And then this is where the patient is getting into this, you know, hopeless phase versus from the beginning. Protect the cells, weaken the cancer. The body is still strong and ready to take more. Right.

And keep the patient on the right, those of chemo for longer to increase the chances of remission. So so practically, let's say you have a cancer patient that is receiving chemo, let's say every three weeks.

You know, that's kind of a normal cycle. So and the fasting mimicking diet, I mean, obviously, they they, you know, mentioned they can't just water fast because that just makes it very difficult.

So to bring in something like prolong what what is a good pattern that an individual should use, you know, knowing that every three weeks I'm going to do chemo.

So do you start them to prolong them for days prior to and how long do you continue? So it's it's you mentioned the brand name and this is the fasting and we get like that we launch is called prolonged we have in proactively we have tested prolonged for cancer in multiple clinical trials but we don't proactively sell it for cancer or push it for cancer.

We're developing a full program because what you mentioned at the beginning is important, is you need to have your doctor involved. You need to in I don't want to say things to generalize because every cancer and every patient is different.

You know, if you're if you're a 45 year old woman with breast cancer doing your chemo every three or year, hormone therapy, etc., we studied the fasting mimicking. They did.

And it can be more assertive if you're a 75 year old frail person doing, you know, with multiple comorbidities, then maybe your doctor should not put you on fasting.

We were interested, so I don't want to generalize here today, but I'll say that what we tested the most on the fasting mimicking nutrition was a little bit of that profile of 40 plus to 65 in a year, all the person that the body is still can take a fasting regimen, meaning that frail, that low BMI, that end stage.

And we have studied to do the four days or the five days right before the chemo, the tyrosine kinase or the hormone therapy. These are the three that we have tested in breast cancer.

We have tested them also in cardioversion, sorry, in prostate cancer, because when you fast you're also improving cardiometabolic profile in in in men with prostate cancer especially after taking the hormone replacement and the therapy there.

He ended up living long, but they ended up accelerating. You know, the the the you cardiometabolic, you know, side effects and fasting outside of the impact potentially on nutrition and helping improve the nutrition environment to give better chances to the current standard of care.

And any nothing we're doing here is to replace standard of care just to help standard of care ends up also helping cardiovascular and helping blood pressure and blood cholesterol and blood sugars.

Right. And blood sugar which receives beneficial prostate and the long term as well they patient with prostate cancer. So an okay so kind of kind of going back to that so you know in that group that you studied so you do that five days, four or five days prior to do you continue?

And again, I mean, these are generalized statements, I get that. But it's just nice for people to kind of have a feeling as to where to go. Do they do they do it on the day of of chemo generally?

Is that where studies have been as well? Or they stop on the day of chemo or when do they stop and when do they and do they just do it around the chemo or do they do it maybe like a few days every week?

The the the study is the design of the slides have been yes. Three days before and the day of the chemo, you know, because the day of the chemo is where you get a lot of toxicity as well.

And you want the body to still you want the normal cells of the body to be hibernating rather than in replicative mode. Right? So this is this is one of the concept, like we mentioned, benefit number three is potentially protecting the normal cells of the body.

So we've tested the few days before and the day off and the day of of the chemo. We've only tested it with it with standard of care, with not just as a stand alone in between cycles.

And so what I can say is the potential benefits and again, we're not promising here cure or remission, but the potential enhancing the body's nutrient.

And in in in being a good hosts for the standard of care is what we're trying to catalyze. And so this is this is the reason that we studied it. Now, if if a person finished its treatment, they're done right with the and they just want to say, okay, I want to this is what we have shown is the fasting the four or five days of fast induces autophagy and rejuvenation and and part of that could detox the body out of the side effects of the you know, the damage that that has been done by the chemicals that they've they've had to take for the treatment. So there is a there is a line of thought.

And in some physicians, do you recommend you stay on the payroll on after you, you know, cancer team has done that for cancer treatment, not for more.

So for the general cells of the body. And to this takes us to why we are a company of longevity into this medicine because at the end of the day you got cancer because you were aging, unhealthy, you had genetic predisposition, but also that same person is at a higher risk factor potentially to having diabetes or having cardiovascular.

And then with the damage and the stress going through chemotherapy and going through that entire treatment, you probably even have pushed your aging even further.

So from a general body and longevity standpoint, this is way more I would be more encouraged to say yes, prolonged for helping that body rejuvenate, helping the cells to try to detox and try to go into a little bit younger, better performing cells with autophagy.

And maybe then you can do prolong once every three months just to help the body after the treatment is done from a from a holistic and longevity standpoint to detox, to rejuvenate, to enhance the the cells performance and and the mental clarity and energy to build that we know are correlated with doing four or five days of fasting.

And obviously to to prevent cancer. If you support longevity and support optimum health, then you minimize the risk of developing things like cancer, but also, like you also mentioned cardiovascular, diabetes, you know, some some of these major killers that that we're dealing with.

Nutrition After Treatment and Longevity Benefits

And so how and so you talk about autophagy. You talked about, you know, kind of priming the immune system. So as you're doing this, then every you mentioned every three months, you want to do kind of like a four or five day cleanse or the fasting mimicking.

Is that kind of what? What. Yeah, once every quarter, once every all the cancer treatment is done. And again, this is not for cancer, but this is more for the body.

And you get to talk to your doctor. If you're not frail, if you're not, you know, or too old to do it, there is a negative

line of thought. We haven't tested what happens if you do it every quarter?

But we do. There's, you know, over a million now. We use this of prolonged the five days fasting tradition for longevity and healthy aging. This is not related to to the cancer treatment but because you went through the stress during the cancer treatment because you had cancer this is all age related and symptoms of sometimes you know how the body aging and if you were prone for cancer you could be prone for other health condition as whether age related.

It makes sense then at that stage to try to and especially if you're in remission and if your BMI is healthy and your doctor is supportive. Everything we're doing here has to be consulted with the doctor, is there?

There are some doctors who recommend doing the fasting injection just as as a recovery phase and rejuvenation phase. And helping the body age gracefully after the treatment is done.

And how do as as patients are going through the chemo and and doing fasting, mimicking it, they're not feeling the same side effects. I mean, obviously, you have to kind of take an average and see that, you know, less people are feeling the side effects.

Is that what's happening? Because they are in a better state of protecting their health. These cells, their immune system is as more active and you're able to have more impact on the cancer cells versus the healthy cells.

Yeah, the theory is is when you fast the the the again cancer doesn't know how to stop replication but the healthy cells know how to do that and when they stop replication they're chemo, chemo, chemo head cells in replication phase.

That's how it works. So the less healthy cells in replication, the less the damage that the chemo is doing to healthy cells. And and that's the is why we we studied in mice and in humans that that that that factor in there's a lot of trials ongoing now.

So we will report maybe next time, even more and more results. And and and again, it's tricky. Like there's a lot of benefits but they're specific to what we studied in can different cancers and different stages in different patients and because we're mentioning here one intervention, one product, I have to be very truthful to the science and very specific and not generalize.

So I'm trying to give the hints, but but stay compliant and stay within the lines of what we can say and whatnot. You know, your doctor, you know, it's very beneficial to go to the doctor and say, hey, so what I recommend is, is go to their neutral website.

Our company L dash neutral longevity through nutrition, LSD. You read the concepts we have the published clinical trials. They're taking those to your doctor and discuss with him whether this applies to you, applies to your cancer, whether he feels confident he or she feels confident doing any.

And it's not just the fasting mimicking nutrition. We've studied a lot, you know what proteins to eat throughout the cancer nutrition to be a little bit more on intermittent fasting and ketogenic versus not.

But again, it depends on the patient and the type of cancer and the type of and the stage and how the body kind of reacts and which stage is is that patient.

So it's up for the doctor to do that. But I think if anything out of this webinar is solicit your doctor and push for nutrition, when we did surveys with oncologist, nutrition is like for them, yeah, we do recommend people to exercise and eat healthy and I tell them eat, you know, wholesome food and and they'll eat a lot of sugar, but go on proteins that this is very general cancer deserves a much better tailored nutrition.

Actually, we're working our founder, Professor Longo, has three clinics. And maybe this is another conclusion from today. We have three clinics where you have doctors and nutritionists.

They specialize in fasting and nutrition for cancer. And one of them is in Los Angeles, the Create Cures Foundation Clinic in Turin, Italy. And they're actually increasing the demand is so high and they're increasing the number of clinics, but you can also call them that can take care of you over offer over even a call.

And they will tailor they will work very closely with your doctor and they will tailor the treatment, the nutritional well, they will support the treatment with nutritional assets that can increase the chances of going through a better journey and have the body be better ready for the treatment and potentially, you know, impact outcomes.

Yeah, because there's so much, so much more than that, you know, sugar feeds cancer. I mean, there's so many different things that the cancer utilizes for its own survival and for its own growth.

And so you have I mean, glutamine obviously is a common one, but then you also have, you know, certain amino acids that supports the production then of the glue that iron defends that the cancer cell has as well.

So, you know, so to know then which amino acids that are, you know, you should try to minimize, you know, while you are trying to go after it with an oxidative therapy like like chemo, you know, then you want to minimize and obviously the antioxidant defense that that the cancer cell has and and people don't recognize that cancer cells that's how they survive.

They it's through antioxidants. That's how they protect themselves. So, you know, just to throw a bunch of antioxidants willy nilly may not always be the way to do it.

You got to be strategic about it. Yeah. And 100% agreed. And then when when you're doing the chemo cycles, the state of the body and the state of the cancer at that day and before and right after is so important.

And so we cannot just neglect that. It's not about just eat healthy in and this has been, you know, long term a little bit disrespect to nutrition as medicine within the and I'm I say it openly because I'm an M. D.

Ph. D. and I've come from that, you know, that side. And I had to learn a lot. I only had one hour of nutrition training in my entire studies, which is which is pretty shameful today, especially when it comes also to diseases like diabetes, where it is 80% a food borne disease.

And how come we don't focus on the solution within nutrition before we start giving pills and poly pills and then injections in the brain? We're talking about Alzheimer's being type three diabetes as well.

And, you know, it's literally nutrition, aging and lifestyle that is the biggest determinant of of when and how we're getting these age related health conditions is definitely environmental factor, genetic factors and and other factors.

But a lot of that is accelerated or decelerated or protected against with the years of lifestyles that you have and the type of nutrition that you take.

Yeah, I mean, we're as America. But that's becoming true with the majority of the world, you know, where we're overfed and undernourished.

Diabetes, Muscle Preservation, and Metabolic Health

And so to to utilize diet as a strategy to to deal with these major chronic illnesses. So in addition to the studies, you know, we've talked about cancer, I assume also since the focus is on longevity, you've done some studies on other diseases as well, along with the fasting mimicking diet, right?

Yeah. We we hopefully will launch a full integrative cancer nutrition program next year. We have already launched last month the diabetes program. And this is we're also very excited.

Again, 80% of type 2 diabetes is is lifestyle related and nutrition is core of that. And imagine, you know, a disease that says, okay, you you overeat, you get more fat, gives you insulin resistance, you become diabetic.

And guess what? If you give signals of fasting, which is the opposite of overheating, it could be one of the fastest way to get into regression in remission.

And it's amazing we've accepted for decades to just give pills. And a lot of these pills, they just sensitize insulin and then they increase fat storage and then increase they push you forward in the disease.

Whereas now with the fasting mimicking nutrition and we put a full program around it for anyone interested here it's go to l-nutra.com. l-nutra.com and you'll see a full program on diabetes regression with called regression meaning you need less medication and remission meaning you can go without medication.

And we're seeing results at month not we're not talking in five years, we're talking in a few months. We've shown that in six months, only two thirds of the patients would start dropping their medications.

And we're seeing 10% of them at that time already not needing medication. So this is amazing. We're this is a disease that we spent $600 billion in America.

This is when most people, upon diagnosis, they feel they're doomed for the rest of their life. This is where we doctors have accepted to just give them pill and let them, you know, add the next year another pill and the year after and then insulin.

And now suddenly nutrition comes in and says, well, you know, it's a nutrition based disease. Let's Fix it with nutrition. Guess what? The fastest way to do that is to fake it fast on the body with our fasting mimicking nutrition and the body pulls back from storing fat, it starts breaking fat fast, reversing insulin resistance.

But at the same time, what's critical, because you can't do any diet to drop in fat though those critical as the five day of fasting to make nutrition gives the cells rejuvenation, which helps the entire body, including the pancreas, to better to better age and better process.

That and if your body and protect the muscle. This is something very important. Sorry, we haven't talk about muscle today. It's critical because the four or five days of fascinating insertion, whether with cancer patients and when they train, when they train or with the diabetic patients, we have shown that we protect lean body mass and it's critical.

It's critical because a lot of therapies will help you lose the weight, but you lose muscle. And a lot of people are and ozempic and wegovy and or on weight loss therapies in diets.

But the muscle loss puts you like we talked with cancer puts you in that vicious circle where the day you stop, you pick up back fat fast because the engine that burns carbs, which is muscle is weakening.

Metabolic rate is lower in you just insufficient circles. So with with prolonged we've now shown in three clinical trials and we have two patterns find that we're protecting lean body mass and why is that so is is not the calorie deficit as much as the stress that happens on day three of the cell, the three is the body saying I'm depleting my reserve, but no, you have to rejuvenate and to artificially is what the Nobel Prize in 2016 was about.

In so you have rejuvenation happening across the body, the stress of the lack of nutrients induces stress hormones, which one of them is growth factor growth hormones.

Growth hormone is telling the muscle to rejuvenate and a water fast is one. When you mentioned toe they fast and a water fast the muscle doesn't have nutrients to grow so you're basically not growing the muscle.

You're losing muscle. But with the prolonged fasting mimicking nutrition, the growth factor, the growth hormone is increased stress hormone response, the muscle is doing rejuvenation.

And now you have the proteins in the club to feed the muscle and maintain it. And this is very critical. And diabetes is very important in cancer as well.

But this is the secret of unlocking diabetes for us. We figured out a way to cut fat without compromising muscle. This is how in cancer, figuring out ways to focus the therapy on the cancer and not impacting the rest of the body.

Yeah, I mean, most most diseases and we're seeing that cancer, you know, being one of them are considered metabolic diseases. So if we then can utilize strategies that are ramping up the metabolic activity within the cells and you mentioned fasting, you're absolutely right.

A lot of people, they they kind of reset their their metabolic status by doing fasting. And they actually even though they're losing weight, they're also losing their metabolic activity.

So when they and start eating, you know, the percentage between fat and muscle, you know, the fat is increasing. And so to be able to do something where you're continually the metabolic activity and keeping that that muscle and just losing the fat is huge.

We see that a lot in breast cancer. Right? Then fat uptake happens, you know, frequently in most patients and they add up having metabolic disorders afterwards and this is where we have studied the was, you know, the fasting mimicking nutrition as well and yeah.

And describing the potential benefits that it creates from a nutritional standpoint to help to the patient have a better management. And so and any, anything else that you feel is important to discuss prior to us ending I mean, this I know you've brought a tremendous amount of information already and and I fasting mimicking diet is something that people recognize the value but then to have tools like prolong obviously to to be able to do it right and to do it in a way that scientifically have been proven, I think is tremendous.

Is there anything elsethat you'd like to add before we wrap up? Yeah, I think my two things that if today, if anything, you know, read the Longevity Diet book because it's so important to understand the concepts of nutrition and entailing in nutrition to, to, to whenever you have a condition.

Number two is really have in-depth discussion with your doctor about tailoring, nutrition and order and therefore either go to functional medicine, you know, support or clinics like the Great Cures Foundation clinics or read the articles and start a little bit, you know, adopting some of these recommendations.

Final Advice: Work With Your Doctor and Use Nutrition Strategically

At the end of the day, we're not talking about chemicals or we're talking about plant based healthy intervention and humans lived on eating and not eating most, you know, for for hundreds of thousands of years.

What we live today, eat every 34 hours and rush for food is a fad. And this is we're paying the price of it with increased cancer and diabetes. So we're not bringing here artificial, you know, we're just re matching the body with what the body is supposed to eat and not eat.

I strongly recommend that you, you read and you you you understand. I'm always surprised with the resistance of the medical community to understand better understand nutrition, nutrition, science.

You know GermanOncology is I forget if it's the second or third, you know highest impact factor in cancer it published in 2016. This is already seven or eight years ago, an article showing that it's just 13 hours of fasting, natural, no products, nothing for just those.

Maybe they just wake up late cancer breast cancer patient and they're not eating in the little bit in the morning 13 hours was enough to induce statistically significant difference in in in rates of remission that survival but just because it was just that you know just the that that what extra step above the 12 hour and so I wonder how come doctors think about that and in that and I invite all the funders here to fund trials that shows what happened 14 hours and 15 and 16 and and and I'd be very interested in doing these trials.

We have a we have a product called the Fast Bar and a product called the Fasting Shake can do them in the

morning. They're tested to mimic fasting in the morning, meaning if instead of doing 12 hours, you went to 16 hours just either bar or eat the fasting shake.

They'll keep your body in a fasting mode for that extra 4 hours. But I'd be very interested in testing water fasts extension and fasting extension. What does it do on cancers?

If people do them every day, it just under feeding the cancer on a daily basis. Right. So so why not? And give the body the calories from healthy fats and a little bit, you know, some some careful amino acid sequence that that also we studied that the spike IGF and low carb and let the body go whenever you have a condition and again we don't want to generalize but that could be one outcome simple outcome that can help a lot many patients. So I know this webinar most people come in their patients and some are physicians so and invite everyone listening to us here and the physicians as well to go reach for that about tailoring nutrition for care for cancer.

Well, Dr. Joseph Antoun, thank you so much for all this information and for bringing moving this science forward for people to to have tools in and the battle against cancer and and just battle against aging.

So thank you so much for joining me. Appreciate you very much.