Introduction to the Kaufman Protocol

I tend to be a little bit off the beaten track and I am a certified junk food junkie. I eat a lot of things with glucose. Um, I don't recommend that anyone follow in my footsteps by any means.

That being said, if you do follow-in my foot steps, there are many ways to skin a cat. Uh, and a lotta them are aimed at glycation. in seven different ways and as a consequence I block each and every one of the possible pathways that I can block to make up for my bad dietary choices.

This is Dr. Talks. Welcome to another episode of the Reverse Inflammating Summit, Body and Mind Longevity Medicine. And I'm your host, Dr. Robert Lufkin.

Today, we get to explore the Kaufman Protocol and how it relates to longevity. We're joined by Dr Sandra Kaufmann, who is a bestselling author and the creator of this protocol.

Sandra, thanks for joining us today. Oh, it is my absolute pleasure to be here. Thank you for having me. Tell us a little bit more about your background and how you came to be interested in this fascinating area.

So I started out my life in the sciences as a cell biologist. I was actually a tropical ecologist and plant physiologist, fell absolutely in love with cells and cell mechanisms.

But per my father, he recommended med school so I could actually afford to live. So as consequence, many years later, I turned out to be a pediatric anesthesiologist people always ask how longevity is related to anesthesia and it is, but it's not.

So what I do now is I look at various agents through the lens of a physician as well as through a lens a cell biologist. But to be more specific, how did I get into longevity?

I'm a bit of an athlete, I am a rock climber, an adventurer, and it dawned on me in my mid-forties that unless I sort of figured out how not to age, my hobbies were not going to last very long.

So I went on this ridiculous quest at the age of 45 to unravel longevity. And I decided that your cells age because that's the basis of who you are, plus as a cell biologist.

Then by manipulating cellular pathways via molecules, which is what we do in anesthesia, you can actually decelerate the process of aging.

Sandra Kaufmannu2019s Background and Path to Longevity

Now this has sort of become my absolutely obsessed hobby and hopefully someday my real future. But for the moment, it's just a crazy hobby. That's great.

Well, before we get into to dive into the protocol and the work you've done in that area, maybe you could take a moment. We ask all our experts this kind of what is your theory of longevity and aging?

Why do we age? Is it just a matter of wear and tear or there are quasi programs at work? What's going on? How do you conceive of it? Oh, excellent question.

So I was also an evolutionary biologist at some point in my life. And I think that you age because after you reproduce and raise kids, there's nothing forcing your body to live any longer.

It's not genetically programmed. As a consequence of that, cells default and they start aging. If you look at the different categories of aging, which we will get into momentarily, There's different reasons for things.

nutritional deficiencies, there's pathway failures. There's a myriad of issues that go on. And I think it's all driven by failure of evolution to need us after we raise our children.

So sort of, and then is it the programs go-on that like salmon, I guess, in the famous example, they swim up the river to spawn and within 24 or 48 hours after that, they immediately die through some sort of program process.

Is that what's going on with us or is it a combination of wear and tear? What's happening beyond our reproductive years, I guess, that results in our dying?

I think it's a combination of things depending on how you sort of look at it. As one example, as you get older, most of your proteins around your cell get glycosylated as an example or they get oxidized and we have some mechanisms to alter that but not enough.

So, if you look at your proteins over the course of time, they become more and more disabled, therefore your cell can't function the way it's supposed to.

Therefore, you take all of the proteins and sort of throw them in the same I'm falling apart category, your cells just can function over a course time.

Your DNA falls apart, everything sort falls a part and so there's just no impetus for it not to fall apart. You know, as an example, you've got four DNA repair mechanisms and when you're young, they're very, very active.

And as you get older, They just aren't because they themselves are proteins and proteins get destroyed over time. So, I mean, it's a multifactorial problem just based on I guess you could all you can narrow it down to wear and tear, but I think it is more complex than that.

Yeah, certainly. Yeah. And some cells in our body don't experience wear and tear like the germline cells and all. So yeah, it's fascinating. What are those repair processes or how does that work?

Well, we can skip to that if you want. Let's take it in the order that you'd like. Before we get into the repair processes, do you wanna talk about the seven tenets of cellular aging?

Is that a good launching off point or we could build up to? Yeah, I think it makes a lot of sense. And I can sort of breeze through this reasonably quickly, but I it gives people an idea of exactly why cells age and how you sort can group things together.

There's many ways of looking at this. Everyone knows people can talk about the nine hallmarks of aging. Someone has a list of 13 of them. I thinks seven is just an easier number to remember.

It's all about putting them in different categories. So, again, seven tenets of ageing. 10 at one, which is DNA alterations. So things go wrong in your DNA.

So we all know telomeres get shorter as cells reproduce, so that's a problem. And we've got epigenetic modification that happens over the course of time, which is a problems.

We also have DNA structural failure that occurs.

Why We Age and the Seven Tenets

All of those things negatively affect your dna, and I would cluster them in 10 at once. Appenent two is mitochondrial failure. Every organism has to have energy.

Energy comes from the mitochondria, as we know. And mitochondrion will fail for very specific reasons. The big one, of course, after the age of 40 usually is an NAD deficiency.

So there's a whole market, with that, and that's the whole big deal that is blowing up right now. But there's all sorts of things in the mitochondria.

For example, the myocondrial transition pore fails over the course of time and that causes cell damage. Of course, free radical scavengers are a big deal and your endogenous system to defeat those fail over time.

So in your mitochondrial alone, there are probably six or seven different reasons that they fail. Option three is pathways. There are innumerable pathways that affect aging in the body.

I like to think about the big three. Of course, you start with the sirtuins. They're seven mammalian sartuins that control cellular homeostasis. One, three, and six are specifically associated with longevity.

And we know that as you get older, the genes don't make the proteins, which then can't affect cellular change and keeping your cell stable. Everyone knows about CERT1, right?

That's why we're all on resveratrol or pterostilbene. But CERT3 is actually a huge deal because it runs your mitochondria. And by the time you are 30, Cert3 starts failing, and by this time, you're 60, it's abysmal.

So these are the things that are very, very important to sort of control as you get older. On top of your sirtuins, the second big pathway is the AMP kinase pathway.

This, of course, measures how much energy you have, which is your metabolism on and off to control things. And then, of course, there's the notorious mTOR pathway, and I know you're a big rapamycin backer, so that's a whole nother discussion.

But that all falls into tenant three. Tenant four is what I call quality control. And this is basically checking your widgets as if you sell as a factory.

So, as I mentioned before, there are four DNA repair mechanisms. There's two for single strand and two double strand, and then there's mismatched repair.

And over the course of time, your body is less able to repair DNA, unfortunately. In every cell, every day, you have up to 10 to the fourth errors. So if you don't fix them, then you're more likely to have bad cells, either cancerous cells or senescent cells.

All sorts of cellular problems. But unfortunately, our ability to fix it fails over time. There's also protein repair issues, right? This is linked to the conversation about chaperones and the UPS system and how we recycle proteins that have gone awry.

Then, of course, autophagy falls into this category because anytime your DNA or your proteins are not going so well, you recycle them so that you can make new ones.

So that's category four. Category five is what I call the security or your inflammatory system. So when you are young, your immune system keeps you nice and healthy.

It keeps foreign bodies away and it keeps your bad cells sort of under control. But as you get older, it fails. You have more senescent cells, you have cancer risks, and you're unable to fight infection and become horribly inflamed over time, which of course is why you guys are having this conference.

Category six, I call individual cell requirements. It's the recognition that all cells are not equal. A red cell obviously has different needs than a liver cell or a brain cell.

And it's idea that we need to get rid of senescent cells and we sort of need keep track and take care of our stem cells. And then category seven is what I call waste management and this is basically glycation issues.

Glucose is horribly bad for you and all of the sugars are in general. And it destroys your tissues over the course of time and it's something we need to control.

And then there's the accumulation of lipofusion, which is garbage within your cell and log of cells that you really just can't get rid of in your brain or brain cells specifically don't know what to do with, cumulates over time and causes brain issues.

Anyway, so in a very large nutshell, those are the seven tenets of aging. Yeah, there are so many there to deal with. You mentioned inflammation, inflammation aging.

What is the relative role of inflammation? Is it one seventh or how do these interact? It seems like so completely different processes. The excellent point.

I think it's huge, which is why we have to organize it in some way to sort of get an idea. I think it depends on the individual. I that for some people, inflammation is absolutely priority number one.

On the other hand, if you have a huge family history of cancer or diabetes or some other concomitant medical issue, other categories are going to be more important.

So I think it's just very individualized. And when you create your personal protocol, this is something that you have to identify. So this how individual longevity programs are sort of built.

The identification of what is the worst category for you. past reproductive age begin to start failing, different mechanisms, repair mechanisms and other things, and the damage and others factors accumulate over time and eventually lead to our aging then.

And what age do you think it really starts? I mean, is it like at the end of reproductive or when do people start aging? When do we start worrying about it?

Well, that's when you start ageing from the moment you're born, to be perfectly honest. But physiologic age, on average, I think is about 35. However, different systems fail earlier versus later.

So, for example, your kidney function, you're GFR starts going down by the time you are 18. That's incredible, right? Levels, as I said before, cert 3 starts dropping by time your 30. That's huge.

But the real things that people seem to notice, symptomatically, of course, women and menopause, that's a huge sign of aging, right? And it generally happens roughly in the same period of time for people.

And I think that sort of like the big canary in a coal mine. My mitochondria aren't good enough, my ovaries aren' t good, it's the first full system to fail.

Other people don't notice age until they have low energy levels or back pain or they're squinting in dark restaurants to read, you know, very small writing on menus.

But I think aging gets noticed at different ages by different people, but I actually think that it really starts between pi 32 and 35. Well, it seems like all these things then build up over time, the failure of these repair mechanisms as you've so beautifully explained.

One question I always get is this damage accumulates over the time and everything starts wearing out in our bodies. We're all familiar with the phenotypes of aging, yet the events that determine our longevity are specific.

You know, number one causes a heart attack and a stroke and cancer and Alzheimer's disease. So it's almost like

aging causes this gradual generalized failure of systems throughout our body, yet longevity is determined by these three to five diseases that don't necessarily come as a result of failure repair mechanisms, or maybe they do.

What's your take on that? So I think that's the difference between longevity and health span, right? Health span is how long can you live without a disease?

Longevity is, how are you going to live in total? And I think people are afraid of longevity because who wants to be 104, you know, traped in a wheelchair?

That just sounds absolutely miserable. But I that the diseases that you mentioned are the end product of cellular failure, right? We know that cardiovascular disease, it's a combination of lipid accumulation, inflammatory issues, failure to clear it.

I mean, there's many, many contributions for cell failure that ultimately lead to these diseases. neurologic diseases, of course. Your brain uses more glucose than any other organ, so it has huge glycation issues.

It uses oxygen, right? So it had issues there, and it very little ability to actually repair itself. So if you have a family history of neurology disease, you know, we just need to address those specific tenants.

In addition, most of the neurologic diseases actually have failure of protein repair mechanisms. So theoretically, if you increase the ability to repair proteins, relative risk goes down in terms of neurology disease.

There's many things you can do because I think it's not random. I just think all development is the end stage of cell failure. Yeah, so all these factors happen in aging then as we get older.

One emphasis of this course, this summit, is on the role that the mind plays in longevity. What do you think the roll of stress and the mine plays, in this area, if at all?

Well, I think it has a huge effect. So, number one, people have to adopt the idea that they're not old. Saying that you are old and acting like you were old makes you old, right?

If you feel young and you're planning on living a full healthy life, I think people just do that better in general. Having a fantastic outlook also forces you to do things like exercise, as an example, is hugely important to longevity.

I'm actually engaging right now. I am writing a third book on exercise physiology with an ex-Olympic athlete on the effect of exercise for longevity and health because it's so absolutely crucial.

But if you've decided that you're old and decrepit, you are not going to go exercise and therefore it sort of begets itself. I mean, it's just a positive attitude will absolutely be helpful.

Can you positive attitudes your way out of diabetes? Probably not, but you can certainly mitigate it perhaps by being more functional and therefore, you know, using up more glucose and blah, blah blah.

And helping yourself sort of functionally. Before you talked about the idea of all these different hallmarks of aging, it's complex, there's so many different things.

And then you alluded to the value of a personalized program and how that can really make a difference in anti-aging. Could you speak to that? Sure. So when I was sort of trying to figure all of this out and I rearranged the categories of aging, I found it extraordinarily frustrating that, okay, now we know what's wrong, how do we fix it?

And as I sort waiting through millions of articles, it would talk about a specific molecular agent and how well it did in any one specific category.

Inflammation, Aging Onset, and Healthspan vs Longevity

It started out as just a big chart. with like pluses and minuses, and then it became a rating system. So now what I do is any agent that we talk about in terms of longevity, I put it through the rigors of every scientific article I can possibly find.

And does Agent X help in all of the different categories? And if it does absolutely nothing, for example, in Tenant 1 for DNA, it would get a zero. If there was evidence that it did something in theory or in culture or on a test tube, it would get a one.

If it was evident to be beneficial in some sort of model that wasn't a human, you know, rodent, a dog, et cetera, would got a two. And if there is evidence for humans, that would a three.

So now what I do is every agent, I think I'm up to 48 of them, comes with a seven-digit rating number that tells you exactly what it does in each tenant of aging and how efficacious it is.

So you can build number grids to determine how well you're combating aging in each of the seven tenants. And if someone is completely healthy, I would argue that all of points at the bottom when you add them up should be roughly equivalent.

If you have a disease propensity where one category is going to be more significant, you put more points in that category. So that's how you sort of individualize your protocol.

Yeah, I love the way that you add the scoring system to the various interventions across one axis. And then, what tests do you use to assess the individual, basically, for the metrics of the individuals, where they are in their biological age or their disease states, so you know which supplements to apply.

How is that done? So if there's a laboratory test for any of the agents, obviously, we're going to do that. Category seven is the easiest, right, because it's glycation.

So we are looking at hemoglobin A1C, family history of diabetes, glycations scores, all of that sort of thing. So, if you have a high requirement in that category, then we need to max out points in a particular category.

Some of these categories have no specific measurement. It just becomes sort of family history and personal history. So for example, in your mitochondria, we don't have whole lot of tests to tell us how great your Mitochondria are.

I mean we could do cell biopsies, but I don' think anyone really wants us to do that. But if you take someone's history and they have very low energy, and that's basically a complaint that I get from any woman over the age of 40, I can't keep up with my kids.

I'm exhausted. It's a mitochondrial failure, so we add points in the mitochondria category. So a lot of it's laws of its history, in some of his lab studies, it is multifactorial.

Yeah, you mentioned before the role that exercise can play in longevity and helping out. in addition to supplementation. We mentioned stress. What about sleep?

Is that an important factor also? Oh, sleep's incredibly important. And it's a negative cycle. So what happens is as you get older, people complain that they can't sleep.

There's many reasons that people can sleep, but from a cellular perspective, sirtuins control your circadian rhythms. Your sartuins go down over the course of time, and of course, suines are NAD-dependent.

Unless you augment your protocol with Nads and some sort of a srtuin activator, you're not going to sleep right? The problem with not sleeping is that 30% of your proteins are actually made while you are sleeping.

So if you don't sleep, you're not going to make the proteins and therefore you'll sleep even less and it's just this

negative cycle. But if can get yourself to sleep either naturally or via supplementation, then you can make proteins, and then it is a positive spiral.

Sleep is absolutely crucial. You mentioned, since we're talking about sirtuins and NAD precursors, you alluded to the recent FDA ruling that came out a couple days ago about NADA supplements and how that's going to affect that.

Could you maybe just tell our audience what the ruling was and, how you think it's gonna affect the NMN and NR space? Well, from what I could gather, they've just directed it at NMN and decided that it's not going to be a supplement.

Theoretically, it should be medication. They did not talk about NR as far as I can tell. So I don't know how long it is going for that to filter down into reality, but I will tell you that I just bought a boatload of NNM just to have it on hand until the whole thing gets sorted out.

And I also bought more stock in Chromadex just in case. I really don't know how the whole thing is going to play out. It is so important for people not to be deficient in NID that something will work out that we all have, it'll be available to us in some form.

Hard to guess at this point. Yeah, just for our audience, these are NAD supplements or precursors, NMN, nicotinamide, mononucleotide and NR nicotine ribonukleide I believe.

Personalized Scoring, Testing, and Sleep

Riboside. Yeah. And the FDA ruling was just that they would be classified as a drug rather than a supplement. So as you say, presumably, NMN, which is the only one the FTA mentioned, would still be available, but maybe through prescription or some type of FDA regulation, Question here, what is the evidence that NAD or NNN supplements support mitochondrial health?

What's the most compelling study we can quote for people? In terms of a specific study, it's kind of hard to say, but I can tell you that NAD does four things in your cells that are absolutely crucial.

So, number one, its part of the electron transport chain. It's part complex one and it shuffles protons. If you are NED deficient, you're by default not going to make that much energy.

Number two, it is a co-factor for sirtuin activation. So without it, your situins don't get activated and all of your cellular homeostasis is sort of in a disarray.

Number three, you actually use it in DNA repair mechanisms. It's part of the PARP nucleotide repair system. If you don t have any D on hand, they're not going to repair your DNA and your risk of cancer or senescent cells escalates.

And NAD is also used as a communication device in your cell between your nucleus and your mitochondria that tells your nuclei about how much energy levels you have.

So essentially, if you are NADA deficient, your entire cellular mechanisms are going to fail. I don't know if that's in one particular study, but you can look at individual studies and identify that.

I guess the challenge is I've heard people who do NAD testing talk about there's a challenge in determining what are normal levels and bioavailability.

You've got to get it in the cell. It's not a matter of necessarily just taking the pill. and all. But the challenge really is, are we delivering it and is it helped?

I don't think there's any doubt that NAD is important in our bodies. It's sort of like phospholipids are important, but I

can't take a phospho lipid pill and I mean, it won't get, you know, won t be delivered and be bioavailable.

Yeah, that's a whole conversation, I guess, with NAD and precursors. And the best we can do is just take the supplements because it's not necessarily going to hurt anything.

Hopefully, more evidence will come in in the future. Well, let me add one thing to that. There is an article that's going to be released about the risk of increasing cancer.

And I think that is going scare people and it's gonna be very important. I mean, I thing the important thing note here is that we're talking about cellular optimization with all of these agents.

Your body isn't smart enough to say, well I'm gonna optimize this good cell over here and not this cancerous cell there. So if you have a history of cancer or there's any chance you could have cancer, taking any of the agents that we talk about can increase the risk of true cancer.

So whenever I have private client, we want to make absolutely sure that they've been screened for everything that can screen for so that when we don't make things worse rather than better.

Yeah, if the article I think you're referencing just dropped today actually is for nicotinamide riboside and its association with cancer, it just came out.

And I guess that's a challenge with any supplementation we're taking. Certainly, with rapamycin, the question was, is that going to increase cancer? With rapomycin it actually lowers the risk for cancer.

But for any of these drugs, Which ones, I mean, across the board, if someone's a cancer survivor, and let's face it, a large percentage of people today, whether it's skin cancer or other types of cancers, are cancer survivors.

Which supplements should they be cautious about taking? Well, I think cancer survivor is too big of a phrase. Cancer survivor 20 years ago is significantly different than one from six months ago, right?

The risk of metastasis is what we're worried about. And honestly, anything that optimizes a cell, all of the agents that we generally speak of may optimize a theoretical cancer cell.

So it is an absolute risk with any of things that I just think that the NAD precursors are so potent, and I think they're one of the huge things that most people should be on.

Because it's so powerful, it is going to activate cancer cells as well. But I don't think any of these things we talk about can theoretically make cancer worse.

You're absolutely right. If you don' have cancer, we are optimizing all of those cells that can reduce cancer risk. A lot of things increase the efficacy of natural killer cells, which of course decreases cancer risks.

So, it's a double-edged sword depending on how many precancerous cells you may or may not have. Yeah. And then there's the school of thought that we all have cancer at a microscopic level and that our immune system maintains it and everything.

But that's a whole other discussion there. Yeah, but some of the supplements I think I've seen like folate in particular has the studies shown that you should really not take it in a recent post-cancer patients and also it's basically a great thing to make people aware of and keep in mind.

Let's talk about one last lifestyle factor, the elephant in the room. What about nutrition? I've heard you talk and say some provocative things about your views on diet and supplements.

NAD, Cancer Risk, and Supplement Strategy

So what about that? So I should probably go on record as saying a good diet and appropriate supplementation is absolutely the way to go. But you are absolutely right.

I tend to be a little bit off the beaten track and I am a certified junk food junkie. A lot of things with glucose. Um, I don't recommend that anyone follow in my footsteps by any means.

That being said, if you do fall in, my foot steps, there are many ways to skin a cat. It takes 72 different agents a day. and a lot of them are aimed at glycation.

I think that you can block glycations in seven different ways, and as a consequence, I block each and every one of the possible pathways that I can walk to make up for my bad dietary choices.

So, yes. It's not a good idea for most people to do it this way, but it's possible. And the reason I tell people this is because I think a lot of folks look at longevity people as if they're, these lifestyles are impossible to achieve.

You're supposed to exercise every day, eat everything incredibly well, starve yourself for 18 hours a day. Do everything right. In reality, that's just not doable for most people.

So by publicly saying that I eat donuts every day, people think, well, if she does it, then I don't have to be perfect either. And the answer is, as much as you can do, That's great.

That is fantastic. Because doing a little bit is better than doing nothing at all. Yeah, no, absolutely. One of my patients with a calcium score, when he saw the calcium in his coronary arteries, he cut back from four packs a day to three packs of cigarettes.

And that was what he felt he could do. It's better than nothing and that works for him. In the future, maybe he can do more. I will tell you, every puff of smoke is like a billion free radicals.

So that man, on top of other problems, needs a ton of free radical scavengers, if that's what he's going to do, right? But you find a problem and you try to defeat it.

With all the discussion about supplements, one question our audience is probably asking is there's so many supplements out there on the market. You go to Amazon.

Let's see, I need an NAD precursor, but there 30 different companies. How do you evaluate supplement manufacturers for quality? Because the FDA is minimally or not involved at all.

So what are your guidelines when you choose a supplement that you know you're getting quality and it's worth the money? That is an excellent question and sometimes it's incredibly hard to tell.

I tend to go to the smaller companies that specialize in the special formulations. So for example, I love the microsomal formulation because the bioavailability is higher.

And I think that to have the mechanisms to create that, they get heavily tested, it is heavily certified, and it more trustworthy. That's one way. I think it just depends on which supplement you're looking at as well.

So as an example, if you are just going to take an amino acid, it doesn't matter who makes that amino. It's really hard to screw up an acid. But if your going take something specialized like spermidine or astaxanthin, then the manufacturer is extremely important.

And acetanthine comes from algae and I love the companies that grow it outside where it's natural. So I loved the company's from Hawaii or Iceland. I mean, are there companies in other places?

Absolutely. But I think it is just very dependent on which agent you're looking at. And for free radical scavengers, what are your favorite agents, your go-to agents for that particular function?

So I think that you should have a fat soluble and a water soluable. So, I use astaxanthin as my fat-soluble, and I used delfinidin from the McKay berry for my water-soluble.

If people are more worried about brain disease, go with andrographrolide. It tastes terrible, but it's more likely to get through the blood-brain barrier to combat neurologic disease.

And it is water soluible. Well, there's so many things you're working on in this, in the longevity space with these supplements and other things. I'm curious what, and so, many, things are happening in longevity.

What are you, what things in, the, longevity, space that you are not working, on are, you most excited about that other, that things that, You've seen in in long java that are exciting for you.

Well, so I like to focus on how supplements affect cells because I'm good at this. I am an anesthesiologist. I like drug doses, pharmacokinetics, and pharmacodynamics.

And I know that and that's my space. What's really amazingly cool are exosomes and the stem cell world. The idea of plasmapheresis is intriguing, but I've not totally sold on it yet.

I think there's a lot of big science out there that is just phenomenal. It's not my space, but I'm very excited to sort of see what they develop. And I've become a huge user of exosomes.

I inject now once a month, and I can tell you, I feel like a million bucks when I do it. Really, really, it's just outstanding. Wow, wow.

Nutrition, Quality Control, and Free Radical Scavengers

So in addition to your protocol for obviously the many, many supplements that you take and the exosomes, what other things do you do for longevity for yourself, if I can ask?

And I'm sure, so what I sort of think about longevity in terms of, I call it the longevity pyramid, right? There's things at the bottom of the pyramid that you can do every day.

Supplements, diet, i am a huge exerciser. I climb mountains, im a rock climber, swim everyday, Im like nuts. So that, on the daily list, also I love red light, infrared therapy.

so I actually sit in front of my light box everyday so that's kind of fun. And then I do things like less frequently like once every month or every two months which are exosomes I take my senescent therapy Every month, or so I'm trying to think if there's anything else that I'd do on a regular Basis, and I don't think there is I think that's about it So the senescent therapy, is that desatinib, the drug?

Yes, I use that. I do high dose quercetin. And I also, there are a few antibiotics you can use in high-dose that work as well. So I've been sort of experimenting with various ones in that genre.

Okay. As far as the other longevity off-label drugs, rapamycin, metformin, So Metaform is just part of my normal strategy. I take five to six actual real drugs a day, but I just consider that part my daily supplementation because I don't actually differentiate molecules.

If you're a molecule, you are a malecule. So I take metformin, I'd take a ton of hydrolazine, and I would take piaglitazone, which is one of my absolute new favorites.

I'll take statin for fun. But pioglitizone is insanely cool because on top of being a diabetic drug, it actually redistributes your fat. So it takes it out of your viscera and it puts it in your sub-Q tissues, which is incredibly amazing.

And it's also one of the strongest PCG1 alpha mitochondrial activators. So, it just has so many good things going

for it, like how could you not? Oh, that's, fascinating.

Yeah. The one I'm excited about, I've just heard about is the PDE5 inhibitors, the Viagra, Cialis are now shown to be longevity drugs. And actually there's an Alzheimer's trial for them.

There's a cancer trial. It's basically similar to the other longevity. But it makes sense if you're going to increase nitric oxide in one vessel or one organ, you might as well do it in all the organs.

No, and I love using the medications for secondary purposes. Like that's a fantastic example, right? I also, I'd love to pegliflozin, why not all of us use it?

You know, like I get diabetics need to get rid of extra glucose, but if we can get out of our extra glucose too without significant harm, then why the heck not, there's so many ways that we could use the present medications from longevity that I think they're just underutilized at this point.

Yeah. And it's amazing. So many of the diabetic drugs are longevity drugs, but it is only the diabetics drugs that lower glucose and lower insulin. The ones that raise insulin, like insulin actually shorten lifespan.

Yes. But acarbose, metformin, you know, it' fascinating. Back to exosomes. That's such a fascinating topic. We could talk for an hour on that, But how readily available are they?

I mean, can regular people get those or what is their availability? That's an excellent question and that's actually a question that you should answer yourself.

As a physician, it's quite simple. You can call the company and they mail them to you. as an actual non-physician, I actually don't know. I would assume that would need to get to a longevity specialist and have them order them for you or have some sort of treatment protocol.

And, you know, as a Physician we sort get away with a lot of things and I have in my freezer at home next to my ice cube tray, which isn't exactly FDA regulated, but, who's going to know?

Exosomes, Light Therapy, and Personal Longevity Practices

Hey, that's where rapamycin was for 10 years after it was discovered before it in that guy's freezer, right? With that old story. You mentioned infrared lights.

Do you use infrared saunas actually for, you know, where you're heating up or is it more just infrared light exposure? Now, I just go with the light exposure.

The saunas are fantastic. I don't have one in my home. But I used to think that it was kind of nuts, but I spent a lot of time reading the research. And it's really interesting because what the frequency does is it causes the ATPase enzyme to go in a circle faster.

That's how you make ATP. So for the same amount of energy going into a mitochondria, you're producing more ATP, So it revs up the cell. It's interesting.

Seven or eight minutes in front of a light panel can actually increase your metabolism by six to seven hours, depending on what it's aimed at. And because I've gotten a little bit nuts about this, I actually got a tiny little portable one and it is in my car and I aim infrared at myself while I'm driving.

If I had the red one, it looks a bit spooky in the car, but the infrared is going to see it. But the benefits are just amazing and such simple technology.

That's fascinating. What's the best way that people can find out? One last thing, have you assessed your biological age? There's so many biological clocks out there.

Have you subjected patients in your protocol or yourself to any of the biological clock that are out. I've not subjected myself to all of them. The ones that I have tested, I appear to be much younger than I actually am, so that's useful.

And in terms of clients out there, which is really interesting, people like the ones who give them the best numbers, right? You can test your chelomeres, you can your epigenetics, your glycation score, anything.

People always pick the one, like my poop score with my bugs are the BEST. Someone called me yesterday and said, I am 19 years old. I'm like, good for you.

In reality, it's a balance of all of the tests. My theory is I max out on every possible therapy I can. Is testing worthwhile? Am I going to change my therapies?

I cant because I've already sort of maxed out. So I don't really do it to myself anymore, but obviously my clients do and they seem to be doing quite well.

Well, how can people find out more about what you're doing? How can they follow you on social media or reach you at your website? So my website is very easy.

It's kaufmanprotocol.com. I'm not very creative in this area, so everything is like Kaufman Protocol. Very simple. So if you go to kalfman protocol. com, it's the website.

My email is on the bottom of that.

Biological Age Testing and Where to Find the Protocol

Um, I answer every email myself. i don't have a secretarial staff, So it may take me a while, but I do answer to every question. In addition, on Instagram, It is Kalfmann Anti-Aging.

And I don't put a ton of stuff on there, but if I'm speaking or at a conference or have something just I am dying to tell someone about, then it's going to be on that platform.

Great. Well, thank you so much for talking with us today and spending an hour with this in this episode. And thank also for the great work you're doing with the Kaufman protocol.

Thank you. It's my absolute pleasure. Thank you for tuning in to Doctor Talks. We hope today's episode has enlightened and inspired you on your path to optimal health.

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