



# CANDIDA SUMMIT



## **Candida, Mitochondrial Dysfunction, and Meditation**

Guest: Dan Kalish

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**Evan Brand:** Hello, this is Evan Brand, certified functional medicine practitioner and nutritional therapist operating worldwide via phone and Skype consults from [EvanBrand.com](http://EvanBrand.com). Now, on to today's guest.

Dr. Dan Kalish, over the past 25 years, has directed three integrative health clinics in California where he has coordinated teams of medical doctors, nutritionists, chiropractors, and acupuncturists. He now maintains an active international consultation practice with patients around the world. He proudly served as an adviser to the Honorable Patrick Kennedy and participated in the first One Mind for Research conference where 200 of the nation's top neuroscientists gathered to promote research on brain disorders.

Dr. Kalish spent two years in formal monastic training in Asia. He lived at a Zen monastery in Japan where he studied under Zen master, Harada Roshi. He also lived in a forest monastery, which sounds like my kind of fun, in Thailand, meditating and transcribing Buddhist text for—I'm going to butcher this. Correct me if I'm wrong, Dr. Kalish—Vipassana Master, Ajahn Buddhadasa.

**Dr. Dan Kalish:** That's pretty close. Buddhadasa.

**Evan Brand:** Well thanks for joining me.

**Dr. Dan Kalish:** Glad to be here.

**Evan Brand:** I told you before we jumped on this that you've honestly changed my life in so many ways. And you probably didn't even know it until today, because I just watch all of your lectures, all of your videos. I think you're the best functional medicine educator out there. And I don't say that lightly, because I study so many people. And no one has been able to transcribe this complex information into a digestible and a grounded, level-headed way.

You don't fear monger people. You don't fear monger practitioners. You don't fear monger patients. You just say, "Hey look, here's the issue. Here's how we test for it. And here's how we fix it." And I just want to say thank you so much for everything you've done for me.

**Dr. Dan Kalish:** I'm really glad to hear that. I am.

**Evan Brand:** Well, let's dive into Candida. We see Candida probably, I'm guessing your statistics are similar to mine, 9 out of every 10 organic acids I find Candida overgrowth. Stool test, the GI map is missing a lot of Candida. Maybe you could help me understand why that's happening.

**Dr. Dan Kalish:** Because Candida can be commensal where it's growing within the digestive tract itself, or it can be invasive where it penetrates into the tissue of the gut. And then it's not going to be found in any of the stool tests. So stool tests can miss it easily. And in fact, the more severe it gets, the harder it is to find on a test.

Think about a donut. If you have a donut and you stick your finger in the hole of the donut, you're not actually in the donut. Your digestive tract is like that. So if the Candida is in that donut hole, you can find it. Because it's the stool. But imagine if you stuck your finger in the donut hole, and then jammed it up into the donut. That's what happens with the yeast when it gets bad. It gets invasive. It goes up into the actual lining of the gut.

So if it penetrates there, it causes leaky gut. But then it's invasive, so it's penetrating into the tissues. And you're not going to see it in the stool. And that's when it gets worse. In fact, it's going to cause more symptoms. But then it's almost impossible to find on the stool test.

**Evan Brand:** Wow. That's a trip. So luckily, we can find it on the urine organic acids test, though.

**Dr. Dan Kalish:** You'll still see the metabolites in the organic acids. Not always. But often. You can miss the organic acids sometimes too.

**Evan Brand:** Oh really? Do you just assume? When you're creating a protocol for people, let's say they've got a bacterial overgrowth or a parasitic issue. Are you just assuming that Candida is usually joining the party in an overgrowth manner, as well?

**Dr. Dan Kalish:** Yeah. It's like you said; it's 90% of the time. So it's almost always there.

**Evan Brand:** Ok. I wanted to chat about mitochondria.

**Dr. Dan Kalish:** Can I say one thing?

**Evan Brand:** Yeah, please.

**Dr. Dan Kalish:** There's a flip side to that. Which is that, this is a really tricky one. You can have a Candida overgrowth, treat it and feel better, but have there be another underlying cause for the Candida. So there's a lot of patients that will come to me and be like, "I had this Candida overgrowth. As long as I eat this radical and extreme and ridiculous diet, and take all these herbs, I'm fine. But every time I stop, it just comes back."

Then, that leads the person to assume that it's this horrific Candida overgrowth that's never going to go away. And in those patients, there's almost always Giardia, or Crypto, or E. histo, or some other bug that's screwing up the ecology of the gut that's allowing the Candida to keep coming back. So that's just something to be on the lookout for.

If you feel like you have this intractable yeast overgrowth that just won't go away, you should find a functional medicine doctor and do all the stool testing. Because you're almost guaranteed there will be some other infection.

**Evan Brand:** Wow. What would you say to those people who are working with practitioners that call themselves a Candida expert, and all they do is just kill, kill, kill Candida, and nothing else?

**Dr. Dan Kalish:** I went through a stage like that, too. Because when you're first in practice, and you put someone on an anti-Candida program. Or like we said, anybody on an anti-Candida program. They just feel better, so dramatically. It's like, wow. I must have solved that problem.

But until you start to really get into the lab analysis, you don't realize that you're just kind of putting a Band-Aid on it and prolonging the problem.

Because let's say you have Giardia, and that's generating your Candida overgrowth. And you treat the Candida only, and you don't do the test for the Giardia. The Giardia is just going to become more and more damaging over time. You may not have the Candida symptoms, but you're going to have something catastrophic eventually that happens that's going to be even worse.

So treating Candida without doing lab work is actually dangerous. Especially if it helps. Especially if it helps. Because if it helps, then you think, "Oh, well that was the problem." But once you've been in practice for a while, if you're paying even a little bit of attention, all of these Candida patients that you treat without labs come back in a couple of years. Because they're like, "Hey doc, I don't know what you did last time, but my whole problem was gone. It's back now and it's even worse."

I was fortunate in my career that around year four, I had been through hundreds of Candida patients where I had made them worse, not better. Because I had treated the yeast without the labs. But then I started doing labs on everybody. And I realized, "Oh. Oops." A lot of these Candida people that I diagnosed actually had Giardia, Crypto, and E. Histo. Yes, they also had yeast, but they had this other problem that was more dominant.

**Evan Brand:** I had parasite infections, too. My Candida levels were off the chart. When I first got my stool test, Justin, our mutual colleague and somebody who you've trained extensively. Justin looked at me. The first time we met, this was when I still lived down in Austin. I'm living in Kentucky, back home now.

Justin looked at me, he goes, "You have parasites." I said, "How?!" He goes, "Evan, I saw old pictures of you. You used to have muscle. What happened to you? You look like a concentration camp victim or something. What happened?"

I'm like, "I don't know." He said, "Let me look at your fingernails." My fingernails had a bunch of ridges and things on them. So we ran the stool test. Sure enough, I had Giardia, and Crypto, and H. pylori. So that wasn't fun. It took me several rounds of herbs to go through it. But now I'm out of the other side of the tunnel. So it is possible.

**Dr. Dan Kalish:** Oh yeah, you can solve these problems. And yeast in and of itself, if that's the only problem you have, you should be able to treat it and get rid of it and move on. So if it keeps coming back, that's a red flag that there's something else going on.

**Evan Brand:** Well said. I want to talk about adrenals, and then eventually want to talk about energy production and mitochondria, which is something

you focus on. And you talk so much about in terms of testing and treatment and things like that.

First, can we just talk a little bit about maybe some basic adrenal knowledge and why it's really important to consider adrenals when you're working on the gut and how it can be detrimental if you're not doing that.

**Dr. Dan Kalish:** Yeah, especially yeast. We just had a yeast case in my training program yesterday. The patient has horrible yeast problems. This is funny, it's not funny. I think it's funny.

Horrible yeast problems, Candida all over the place. I won't go into all the symptoms but it's kind of gross. But whatever, she's having a lot of problems. And then she takes a two-week trip to Bali.

**Evan Brand:** Oh.

**Dr. Dan Kalish:** And everything gets better.

**Evan Brand:** Oh, I thought you'd say it's gets worse. I see Bali Belly all the time.

**Dr. Dan Kalish:** I know, no. She goes. As soon as she got on the airplane she started to feel better. And as soon as she came back, all the problems came back.

And another guy, Chicago based, hedge fund manager, he had \$700 million in his company. It wasn't his money, but he was managing this money for people. Super high stress. 40 or 50 employees running this huge firm, with high stakes. They're basically betting, it's like Vegas. They're betting on the stock market and trying to make money for other people.

As soon as he took a vacation, the yeast cleared up. But he had this perpetual yeast problem, year after year after year. So you can have emotional stress that's driving a weakening of your immune response in your gut. Because when you're emotionally stressed, your cortisol levels go up. Your secretory IgA drops, and that's the immune defense system in the gut. And then the yeast starts to proliferate.

So the yeast can proliferate simply because your immune response becomes weak independent of whether you take a ton of antibiotics, whether you eat a ton of carbohydrate and sugar, or whatever. Stress alone can trigger the yeast overgrowth.

And you see that in some patients. Not all the time. But some people, the primary issue is stress related. So then we have to test and correct the adrenal glands as part of the yeast treatment in order to get that immune response in the gut back up. In fact, if everyone had a really great immune response in their gut, there probably wouldn't be any Candida overgrowth problems in the first place, right? It's that connected.

**Evan Brand:** Yep. So the IgA, I'm seeing the secretory IgA low in almost everyone. And I always wonder, chicken or egg? Was it the infections that suppressed the immune system, or was it the immune system that was suppressed due to stress and then the bugs came in? I'm guessing it's probably both, right?

**Dr. Dan Kalish:** Yeah. I've studied this intensively. The vast majority of time, in the patients that we see. I don't know if that's representative of the world, but of functional medicine patients. There is a stress induced problem that then weakens the SIgA, and then infections are picked up.

In some cases, less commonly, the person is perfectly fine, perfectly healthy, eating a beautiful diet, in a beautiful relationship, with a beautiful job. And then they randomly pick up an infection. That is rare, but it does happen.

I had a couple, man and wife. They were in Egypt. They fell off their riverboat raft, into the Nile river, right where there was a raw sewage spill. They basically were swimming around in an Egyptian toilet for 10 minutes until they got rescued. And they both came back riddled with parasites. They were married. They were happy. They both had great jobs. So that was an extreme example.

Another woman actually in Austin, Texas, Holly, raw sewage spill in her basement. Entire basement was flooded with a foot of toilet water, basically. And she waded around in there for days trying to rescue all the family photos and stuff.

So if you have some extreme exposure like that. Or in my case, I'm living in a monastery in Thailand in the jungles near Cambodia, and, boom, I get a parasite from bad water. So that can happen. But most of the time, people are under intense emotional stress first, and then these bugs that are surrounding us all of the time, all of a sudden, boom, just pounce.

In other words, you can be exposed to Giardia every day. And if your immune system is in great shape, your body just flushes it out. It's when we are weak that we have these problems.

**Evan Brand:** Really?

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**Dr. Dan Kalish:** They actually did a study on this years ago. And they don't allow studies like this anymore. But it was a group of prisoners, I think it was in Texas, actually. They got away with this. They basically gave everybody, I don't know, it was like 15 or 20 prisoners a glass of water with Giardia in it. So they all got Giardia and got sick.

And then they monitored their SIgA levels. And the ones that had good SIgA, obviously had diarrhea and nausea and vomiting for a day or two. Then they flushed out the Giardia. And the ones with low secretory IgA, with a poor immune response, acquired the Giardia and it became a chronic infection.

**Evan Brand:** Wow. So leaky gut can be a good thing in the sense that if you get exposed to a bug, maybe an E. coli or a parasite, Giardia, you want that gut to be "leaky" for a minute, or a day, to flush everything out. And then it seals back up and you're supposed to go back to normal.

**Dr. Dan Kalish:** Yeah. But usually the term leaky gut refers to chronic inflammation and damage. But yeah, a short-term inflammatory response in your intestinal tract is fine. It's healthy. You're supposed to flush things out.

**Evan Brand:** I spoke with a guy right before I called you. He had just got back from Mexico. He took his kids down there. The whole family got sick. It was him, his wife, and the three kids. Him and his wife, I guess more stressed. They're still sick from the trip. This was several weeks ago that they went. The kids were sick for a day, and now they're back to normal. So that's pretty interesting.

So it sounds like because the parents have more stress on their plate, they can't just bounce back from an infection like that. And the kids, maybe they did pick up Giardia or something, and now it's gone. Whereas this guy, we just got his stool test back. He showed up with whip worm. And we saw some of the fecal occult blood on there. And then we saw also Cyclospora, which was on there. Are you seeing a lot of Cyclospora, as well?

**Dr. Dan Kalish:** Not a lot. Occasionally, but not a lot.

**Evan Brand:** Is that just a water thing?

**Dr. Dan Kalish:** Honestly, I don't know. It's kind of new to me. We didn't ever used to see it until the GI map. So I don't know too much about the background of it.

**Evan Brand:** Let's go back to the adrenals for a second. So you mentioned the stress bucket. And basically, people that have more on their plate, they're

going to get more affected by these infections. So do you think everyone should just be on adrenal support forever? I love adaptogens. I take them so much, I don't ever want to stop. But it's like, should I stop? Or should I just be on adrenal support forever?

**Dr. Dan Kalish:** No. Being on adrenal support forever... adrenal support is like when you're driving your car and you turn the flashers on and it's flashing. Something's wrong, right? You don't just drive around with the flashers on. That would be weird.

Being on adrenal support forever means you've got some major lifestyle issues you need to address. So yeah. There are certain times when you can't avoid it, like someone in your family dies. Your mom dies, you're going to have a bad year or two. And you could take some adrenal support. Just to get you through the tough period of time. Or you have a baby and you're not sleeping for a year. You could take it.

But for the regular, non-traumatic periods of our lives, you really should be, self-medicating with yourself not with an herbal product. It's kind of like cheating in a way. It allows you to get away with more stress than your system would normally handle.

**Evan Brand:** That's true. My excuse is the baby. I've got a toddler at home. So my excuse will be her messing up my sleep rhythm. So I'm pretty much daily doing ashwagandha, sometimes reishi, motherwort, sometimes rhodiola, sometimes holy basil. I just kind of cycle through. Schisandra berry. I just kind of rotate those through the week. Just because I'm woke up sometimes four times, sometimes five times a night. If I don't do that, I feel like I wouldn't be able to do the back-to-back clinic calls without burning myself out.

**Dr. Dan Kalish:** Yeah, that's fine. You have an extraordinary circumstance, like a young child or someone who is sick or something like that. I think that's reasonable. But outside of that, it shouldn't be a day-to-day coping mechanism. You want to find better coping mechanisms.

**Evan Brand:** Well, I'm a huge fan of just how much you have promoted and discussed meditation. You say you do something, which to the average person they're going to say, "How in the world is this possible?" What, three hours a day of meditation? Something like that.

**Dr. Dan Kalish:** Yeah. I actually do.

**Evan Brand:** That's amazing. How do people, how do they even get started with that. What's the saying, something like if you can't meditate for 20 minutes that means you need 40?



**Dr. Dan Kalish:** Right. Well I think it's helpful to find a good teacher. Or at least to read a good book about the idea. But it's really helpful to have a teacher or somebody. Maybe you go to a weekend workshop, or a weeklong workshop where you can actually learn from someone who is experienced. It's kind of a hard thing to do in a vacuum.

**Evan Brand:** I feel like some of these apps, sorry to interrupt you. There are a lot of people promoting apps. Like there's an app called Headspace that people discuss. I'm just not a fan of a guy with a British accent telling me to breathe. I haven't found that to be so conducive to a good meditation.

**Dr. Dan Kalish:** Well I think it's a misconception of what meditation is. Meditation is not—we've watered it down. It's kind of like, if you've ever been to a really great restaurant in Italy, and had really good Italian food, versus Domino's pizza in America where we think of Italian food. So Americans have a way of taking pretty amazing, cultural things and watering them down.

The whole point of meditation is that it's a spiritual practice. It's not a relaxation technique. It's not a way to turn your mind off. And we've kind of dumbed it down to a psychological tool for destressing. But that's like calling Domino's pizza the best Italian food in the world. It's an Americanization of a concept and the total distortion of the purpose.

In fact, I've studied with several enlightened masters. Many. Maybe three, four, five. I don't know. Six. Something like that. They're not relaxed people. They're busy with social justice causes. They're feeding poor people. Educating poor people. They're running huge conferences. They're not just sitting around in a hut relaxing.

And meditation itself is designed to get us in touch with our spiritual life. Not as a way to turn your brain off or to relax. We just turn everything in America as kind of self-indulgent, me, me, me, me, me thing. It's kind of ironic. Meditation is the opposite. It's supposed to be you connecting with the spiritual world, and the result of that is wanting to have social justice and wanting to participate and help people.

You look at every enlightened person in the world, they're not online talking about apps. They're all in the world helping people who are less fortunate. That's the whole point of meditation. So I think we kind of got it backwards.

And absolutely, we could maybe change the name. The apps maybe are good just for relaxing. And turning your brain off a little bit. But you don't want to conflate that. You don't want to mush that in with the concept of spiritual practice and take away the important part.

And I think what people are missing, which will relax them, is the spiritual connection. Because once people get spiritually connected, and they understand what happens to them after they die and they're not worried about death anymore, then they become peaceful and relaxed and happier. So it's like the confrontation and understanding of what death means to us. I think that's kind of the essence of it.

**Evan Brand:** I think we have a fear of death in America, too, even just the whole society of burials. Not to get off topic. But I did see a crazy documentary called *Our Daily Dose*, about mercury. And it was studying about how people that lived close to a crematorium, where they are burning the bodies. Because of all the mercury fillings in the people's mouths they are burning, the level of mercury in the soil near crematoriums and then obviously I'm sure the people living near crematoriums, their mercury levels were just off the chart. I thought that was crazy.

But anyway, back to my original thought. People in America, we have such a fear. And our culture in general, the news is fear based. But our lives are driven by fear, too. I feel like a lot of people that we're working with maybe they're seeking health due to a fear-based reason not for an enlightened based reason. How would you suggest somebody reframe their thoughts about life and death and this whole fear-based culture that we're in?

**Dr. Dan Kalish:** The first thing, and this is more according to the Taoist teachers that I work with now. The first thing you do is you get yourself ridiculously physically healthy. Because until the vehicle is in good shape, it's hard to really make it work. It's like, I have this Alfa Romeo 4C. This is the love of my life, this beautiful sports car. And before you take it to the track and race it hard, you get it ready. You've got to get it ready.

So, it's really hard to get spiritually connected if you're just feeling sick all the time. So I think step number one is attention to the physical body. Not to an obsessive point, but just to the point where you're in good enough shape that you can start to tackle the emotional and spiritual work.

So if people have a massive Candida overgrowth, and they're tired all the time. Meditating, what's the point? You don't have the vehicle in good enough shape. This is why I think functional medicine is so important. Getting yourself super healthy first.

And then once you achieve a high level of health, and your optimum functioning is all happening physically. Your mitochondria are working. Your brain is working, and your gut is in good shape, and all that is taken care of. Then you can start to pursue higher cause stuff. Like why am I here? What

does it mean that I'm going to die? And how can I understand my mental health, spiritual health, now that my physical health is in decent shape?

But it's almost impossible for people to pursue that when they're just so tired they can barely get to work and back.

**Evan Brand:** I agree. Well said. It's the same thing too with—I love how you use analogies—but if you've got an engine light coming on, you can't be going and putting brand new rims on the car or getting a paint job or washing the car or upgrading your stereo system when the engine light is on.

**Dr. Dan Kalish:** Exactly.

**Evan Brand:** You've got to fix that first. So let's talk about mitochondria. This was something that has not been mentioned yet in the realm of Candida and treatment and such. My understanding of Candida, please correct me if it's wrong, but Candida are creating, not only are they crowding out good bacteria and creating competition and messing up nutrient absorption and stuff like that, but that they're releasing toxins, too, which can damage mitochondria. And now you've got to fix mitochondria, and you can't just do the Candida killing because the mitochondria might not magically fix themselves.

Can you just educate us on that a bit?

**Dr. Dan Kalish:** Yeah. So one of the concepts with yeast overgrowth, it's a fermentation process. It's just like yeast when you think about making bread or making beer. You're taking a sugar, and you're converting it.

And one of the side effects of that yeast fermentation process, and this goes on in people's guts, what they call auto-brewery syndrome. You're literally making alcohol in your gut. But you also make this compound called acetaldehyde. And that is pretty toxic stuff. That's what gives you a hangover if you drink too much alcohol. It's the same chemical compound that gives you a hangover.

So if you have a yeast overgrowth, you're making that chemical compound. And it's pretty damaging to your liver, to your mitochondria. And it basically causes a stress response to the mitochondria. And they can become either damaged or they can be destroyed.

The mitochondria are the energy powerhouses of your cells. They're making all the cellular energy for your body. So if your mitochondria are taking a hit, you're going to become physically exhausted. And that's one of the main reasons why a long-term Candida overgrowth just makes people tired.

And then getting rid of the Candida will help. But you still need to rebuild and repair and bring the mitochondria back online to get the energy systems back. And if you look at the sources of energy in the human body and what we do with all of the energy that we make, around 20% of the energy goes to the brain. The brain sucks up a lot of juice. About 20% goes to your liver. And another 20% or so goes to your musculoskeletal system so you can move around and do stuff.

So when you think about mitochondria problems, people get brain fog and fatigue that's related to the brain not having enough energy. People have problems with liver detoxification related issues, because their liver is not getting enough energy to get rid of toxins. And then people just physically get tired, because their muscles don't have enough energy to run around and do things physically. So those are the three manifestations that are obvious of a mitochondrial problem.

**Evan Brand:** So you mentioned the liver, as well. How does that tie into this whole conversation? Many people have spoken about killing, killing, killing. And I've had so many clients come to me and say, "Evan, I had to stop working with XYZ practitioner because they made me have a Herxheimer or some type of die off reaction so bad that I couldn't get out of bed." And my intuition is like, I don't think that's a good thing. I don't know if I agree that you should get worse before you get better. To me, it sounds like a poorly designed protocol. What's your opinion?

**Dr. Dan Kalish:** Yeah. When you start killing things in the gut, like yeast, all the debris has to go somewhere. And it's like a battlefield. If you watch a Civil War movie, and it's like Gettysburg or something. 50,000 bodies all over this field. Someone's got to go and pick them up? They're not going to take care of themselves.

So the yeast organisms have to get processed once they're dead and killed. And all that gets dumped on your liver. So if you're getting more and more fatigued as you're trying to kill the yeast overgrowth, usually there's a backlog and the liver is not able to clear the debris as quickly as it's getting dumped on it. And again, the liver is highly energy dependent. And you don't have the mitochondrial energy. Your liver is not going to be able to clear things.

People think about detoxification in terms of detoxification pathways. There's phase 1 and phase 2 detox pathways in the liver. Those are critical. But if you don't have energy, neither phase 1 or phase 2 are going to work.

**Evan Brand:** Ok, let me get this straight. If there are mitochondrial issues, you're saying detox pathways won't work.

**Dr. Dan Kalish:** Yeah. Think of phase 1 and phase 2. I think of it like a washer and a dryer. Like you're washing your clothes. So phase 1 is like the washer, and you wash your clothes. And hopefully right away you take your clothes one they're done with the washing and you throw them in the dryer. And then everything is good.

If you leave your clothes in the washer for like a week, you open it up and you're like, "Wow. That was not a good idea." They get kind of nasty smelling. So you've got to phase 1 quickly, and then phase 2 takes care of the rest of it.

But imagine that you just unplugged your washer and dryer, and you took them out. There's no more electricity, no more gas. They're not being powered. Are they going to work? No. So the energy that powers phase 1 and phase 2 is ATP, cellular energy, that comes from the mitochondria.

So you could have every phase 1 and phase 2 nutrient, and everything beautifully set up in your liver. And if you don't have the ATP, none of it is going to engage. It'd be like unplugging your washer and dryer. It's just not going to work. People don't think about that!

**Evan Brand:** No they don't.

**Dr. Dan Kalish:** It's super important. It's like the critical ingredient. If it's not plugged in, it's not going to work. You have to have the energy component.

**Evan Brand:** I agree. Now let me ask you this. From a lab testing perspective, are you going to see that? Are you going to see mitochondrial dysfunction?

**Dr. Dan Kalish:** Oh yeah.

**Evan Brand:** Or, do you skip mitochondrial support if the markers look ok on the OAT test. Do you skip it and just do liver support with a gut protocol? Or are you always going to do mitochondrial support?

**Dr. Dan Kalish:** No, you just treat what you see on the labs. But the labs are really hard to interpret and most doctors don't know how to find out the mitochondrial problems. On the organic acids, especially. It's confusing.

**Evan Brand:** My understanding, just based on watching hours and hours of your lectures, which I just love, on OAT testing, if those markers show up on the low end, so someone has completely bottomed out there, or they're on the very high end. Anywhere outside of the middle, so to speak, is a dysfunction. Correct? Either at bottom or top end?

**Dr. Dan Kalish:** That is correct. Most people don't understand that, because most people don't watch my videos. So most doctors only treat organic acid markers that are high to bring them back down. And don't realize that in a system where the mitochondria are retracted, or damaged, or dead, then you're going to see really low level of markers.

Usually, when doctors see low levels of organic acid markers for mitochondria, they think that's a good thing. Because high is bad, so you just assume low is good. But if too many of them are low, in too much of a pattern, then it means that there's not enough mitochondria left anymore.

And that's what Dr. [Lorge] my teacher, calls a hypometabolic state or retracted mitochondria, meaning they're gone. You don't have enough of them. So you're not getting these energy markers measured, because there's not enough energy being made.

That's even more of a problem than an energy system that's dysfunctional. It's an energy system that's basically destroyed. That's super common.

**Evan Brand:** Wow. It's very common. I'm so glad that I was able to watch your lectures and learn about that. Because it significantly increased my success rate. What else on the OAT test are people looking at, or people looking at incorrectly. What about the neurotransmitter stuff? I've seen so many issues of very high dopamine, and I know Great Plains and Genova, they may mention something like a lead toxicity problem. But I just wanted to ask you about the dopamine one, and then if there are any other markers that many people overlook.

**Dr. Dan Kalish:** Homovanillate, you mean?

**Evan Brand:** Yes.

**Dr. Dan Kalish:** Ok. Homovanillate is a urinary byproduct of dopamine. And you're wondering what it means if that's high?

**Evan Brand:** Yeah. So if it's high, off the chart high. The lab on the read out, they'll say, "Hey, it may be lead." I just wonder if it's that or are there other things too when you see dopamine very high. Let's assume that there weren't many gut bugs. Because I know the HPHPA marker for clostridium infection could drive up dopamine, too. Right?

**Dr. Dan Kalish:** Yeah. You cannot make an assumption that just because the dopamine is under stress that there's lead. You can't extrapolate that. You have no idea what's causing it. Because anything can cause a dopamine response. It could be your mother-in-law visiting. It could be emotional stress

purely. It could be heavy metals, chemicals, foods, infections. It could be too much exercise. It could be a financial crisis.

So that's a nonspecific marker that shows the dopamine system—it's shows your catecholamines. It shows an increase in your stress response, basically. But it's not any more specific to lead than a high cortisol would be.

**Evan Brand:** Ok. And then how could we tie that dopamine piece into the adrenal piece? Are you seeing, like in the early stages of adrenal stress, that dopamine would show high? But then if someone has been chronically long-term stressed dopamine goes low? Does it happen that way?

**Dr. Dan Kalish:** That is accurate. There's a group of chemicals called catecholamines. And they include dopamine, epinephrine, and norepinephrine. The British call epinephrine adrenaline, and the British call norepinephrine noradrenaline. I like to use the British terms better, because everyone's heard of adrenaline.

**Evan Brand:** I do too, yeah.

**Dr. Dan Kalish:** And so obviously adrenaline is made in the adrenal glands. We actually use that commonly in speech. "I got an adrenaline rush from jumping out of that airplane," or whatever, "when I was parachuting."

So adrenaline, noradrenaline, and dopamine together are called catecholamines as a group. They're tied together because when we're stressed, we get this adrenaline rush. Everyone is used to saying that. And not only do you produce a ton of cortisol, but when you're stressed you produce a ton of the catecholamines, simultaneously. Not at the exact same moment, one and then the other.

So if you're really stressed, you're going to have high levels of catecholamines, dopamine, adrenaline, noradrenaline and high levels of cortisol. And then as you get more and more burned out, they're both going to drop.

**Evan Brand:** Ok. And that's something, people may say, "Well how does that tie into Candida?" Well, Candida you would say is a stress, right? You mentioned the gut. You mentioned chemical, environmental, things like that.

**Dr. Dan Kalish:** It is very common to see gut inflammation triggering dopamine, epinephrine, and norepinephrine problems. That's the whole gut-brain connection. We see that all the time.

**Evan Brand:** Wow. Let's talk about the diet, just for a bit. The diet piece, how much of that is responsible for when we see inflammatory markers? Maybe

the people that come to you or come to me, maybe they've already done something like a whole foods diet. So maybe they're eating better food already. I'm just wondering, compared to Candida and parasites and all these other gut issues, if we were to draw a pie chart and say, "OK. We have very high calprotectin. The inflammation in the gut is off the charts." How much could we blame that on diet versus the gut bugs?

**Dr. Dan Kalish:** Well. This is a tricky one. There are some people who are born sensitive to certain foods, and those foods are going to cause gut inflammation as soon as they start to eat solid food. And they could have a dairy allergy, or lactose intolerance, or a gluten intolerance, or something like that. In which case, as soon as you started eating regular food as a kid, you're going to be inflamed.

Other people, this is sort of a subset of people that are like that. I don't know what the percentages are. It depends on what you read. Two out of 10, three out of 10. I don't think anyone really knows. But it's not the majority of people.

But other people will have stress or infections that they pick up, which damage the gut lining and, in a sense, create the food intolerances or food reactions. They may have been present to such a mild extent they would never have been noticed, but the stress or the infection sort of brings out the food allergies. And there are a lot of patients now that have multiple food allergy problems that are generated from stress and gut infections.

So it can work either way. I think it's more common that the stress and infection thing triggers it. But in some people, they're just born with a gluten or a lactose problem, and the foods are going to be the primary and first inflammatory trigger.

**Evan Brand:** Well said. I would agree. I've had people that are doing a whole foods maybe, call it a pegan diet, paleo-vegan diet, tons of vegetables. And they've got H. pylori infection and the inflammation is just off the charts. Yet their diet looks perfect. And it's like, wow. I can't believe a single issue could crank up inflammation in the gut so bad.

And they wonder, "Oh, Evan, I had such a perfect diet." And then they feel like their money is wasted. Because they spent all this money at Whole Foods, and yet they're still inflamed, and they still have food sensitivities and rashes and all that.

**Dr. Dan Kalish:** Yeah, it's definitely what you absorb, not what you eat that counts. You could spend \$300 at Whole Foods pretty fast on food. And the fact that people hesitate, even for a millisecond, to spend that much on a stool test



is just economic suicide. Everyone should do the stool test, no matter what. It's \$300-400. It's a very small amount of money compared to what you're going to learn.

**Evan Brand:** I agree. How do you approach retesting with people? Are there certain cases where you say, "Hey, you're eligible. You can skip a retest based on symptoms." Or regardless of the bugs you see, whether it's bacteria or parasite related, you're always going to retest.

**Dr. Dan Kalish:** No, I don't always retest. It depends on how severe the infection is. If it's something you could give to your spouse, or your kids, you should definitely retest, like E. histo.

**Evan Brand:** What else would you think is passed between each other? Who is going to do the studies on that to see? But I see so much correlation and I don't know what I'm looking at that's actually being passed between husband and wife, like H. pylori versus other things.

**Dr. Dan Kalish:** Yeah. H. pylori you can get from kissing. Sometimes with a married couple, I think they may have just eaten the same bad food at the same restaurant, you know. Or they shared a glass of water somewhere. So they both got the infection at the same time. And then some of these infections, you can pass on through sharing a kitchen for long enough, or sexual contact.

I've tested a lot of couples. It's not always the rule. Often times there's one member of the couple who has a weak immune system, and the other one is like, "Oh, no. He's fine. His stomach is like an iron, whatever." So again, you could both drink that glass of water with Giardia, like the prisoner experiment. And the one spouse with the weak SIgA gets sick, and the other spouse gets sick for a day or two, but then flushes it out.

**Evan Brand:** Makes sense. What do you say to the people that say, "We can co-exist with infections. Parasites are good for us. We need to have them around, and we need them in our gut."

**Dr. Dan Kalish:** Well. There's truth to that argument, but there's a caveat. If you have a really super, super healthy microbiome, then I don't think any of these infections that we talk about matter at all. So you could coexist with H. pylori or Giardia or any of these problems. You would never have a yeast problem, because the yeast wouldn't overgrow.

But it's a host specific problem. In other words, it's the weakening of our own system that allows these infections to become problematic. And you can have an asymptomatic cryptosporidium infection your whole life and die at the age

of 93 and be super healthy if you have a totally intact and beautiful microbiome with all the commensal bacteria. And how often do you see that? Hardly ever.

So if you've taken the antibiotics, or if you've eaten too much sugar, or if you don't eat enough fruits and vegetables and your microbiome is trashed, then these infections become really significant.

Another way to approach this, and this is too hard to do. I don't think it's realistic. But in a fantasy world, when you detected infections like parasites, you could just normalize and perfect the microbiome and the problem will go away. But that's just not a realistic strategy. It would take so long, and it would be so hard that I don't think most people could pull it off.

**Evan Brand:** And you say that because so many people are so stressed, and overworked, and have EMF, and bad sleep, and things like that you're saying.

**Dr. Dan Kalish:** And most of the patients we're talking about, anyone who is listening to this for sure, has got so much damage to their gut lining and their gut microbiome already that you're not just going to eat your way out of it. You know?

**Evan Brand:** Agreed.

**Dr. Dan Kalish:** It's almost like you have to hit a reset. But in a perfect world, and they're working on this, with things like fecal transplants and stuff. There may be a day where you can take a pill that has everything that you need to make your microbiome perfect, in which case these infections would become irrelevant. But we're pretty far away from that right now.

**Evan Brand:** You know what's crazy? I had a client who did a fecal transplant and his personality changed. He started liking different music and having different food cravings than he did before. And I've heard other stories of that where I think it was a lady. There was an article about this. A lady got a fecal transplant, and she started listening to jazz music and she had never listened to jazz music before. And then somehow she tracked down the donor. The donor was an African American guy who all he did was listen to jazz music. It's like, whoa.

**Dr. Dan Kalish:** Well absolutely. I do a lot of microbiome testing now. It's related to the yeast discussion because if you have a yeast overgrowth or Candida overgrowth, by definition your microbiome is pretty messed up. And the microbiome refers to the commensal or normal bacteria that are supposed to be there. And there's only a certain amount of room in your intestinal tract

for anything to grow. So if there's a yeast overgrowth, by definition there's got to be a deficiency of the good organisms.

When you really get into this, it's fascinating. Some of these commensal bacteria control our immune response. Some of them control our cardiovascular system. Some of them control our sense of food. And they did this with mice in the laboratory, and I think the exact same thing happens with people.

You can take the microbiome from a fat mouse and put it in a skinny mouse, and keep the diet the same, and the skinny mouse gets fat. Because the bacteria are controlling our metabolic rate. So in other words, it's not just what you eat. The bacteria in your gut are controlling whether you're going to burn a lot of fat or store a lot of fat.

So you could be on a really calorie-restricted diet with the wrong bacteria in your gut, and they're just going to pack away the fat, completely independent of how many calories you're consuming. You get those bacteria out, and you start to burn body fat. That's how crazy it is.

**Evan Brand:** It is crazy. I know we've got to wrap up, I just have another question about probiotics. How do you approach probiotics? Do you believe that somebody should be on a probiotic during a killing phase? A post-infection phase? Do they stay on them forever?

**Dr. Dan Kalish:** I know too much about this now. This is a problem. The easiest way to do it is if you're having symptoms while you're doing the killing, to put the probiotic in to just ease the symptoms. If you're not, save the probiotic. Do the killing first, and then do the replacement afterward.

The main way you can replace the intestinal bacteria is through the fiber that is found in certain foods and the polyphenols that are found in certain foods. The easiest way to get the fiber, in a sense it's a prebiotic. That's going to help the good bacteria grow, is from eating beans. Black beans, pinto beans, legumes, garbanzo beans, lentil soup. It doesn't matter. Any kind of bean will have the fiber that the good bacteria need to grow.

And then polyphenols are basically going to be in your fruits and vegetables. So the fiber we don't digest, the fiber is for the bacteria to grow and thrive on. The good bacteria. And the polyphenols in fruits and vegetables, I always thought that we were breaking the polyphenols down, but we're not. The polyphenols are broken down by gut bacteria. And then that's what releases all the antioxidant properties in the polyphenols.

So when you eat fruits and vegetables, one of the main things you're doing with the polyphenol content is feeding the good bacteria. And when you eat beans, one of the main things that you're doing is feeding the good bacteria.

**Evan Brand:** Wow.

**Dr. Dan Kalish:** You have to eat beans every day. You have to eat beans and fruits and vegetables every day.

**Evan Brand:** Do I take digestive enzymes or something with them? I just don't do well with beans. What should I do?

**Dr. Dan Kalish:** If you eat beans. Remember they're feeding the bacteria. Some of these bacteria generate hydrogen gas. So people get gassy. There are other bacteria that are in the gut that consume the hydrogen gas. So if you get gassy from beans, you want to just start with a tiny amount and give it a few months and gradually increase until the bacteria in the gut start to rebalance. And then that poor reaction to the beans should go away.

So you might even start with a tablespoon or two of beans once a day. Throw them on your salad or whatever. And then you just kind of gradually, over the months, work up. Because as the bacteria feed on the fiber in the beans and they make the hydrogen gas, eventually the hydrogen-consuming bacteria will come up to speed and then things balance out.

**Evan Brand:** Is there a certain way to cook them that matters, in terms of sprouting, soaking, etc.?

**Dr. Dan Kalish:** I don't think that matters at all. I wouldn't eat raw beans. They could probably hurt your teeth or something. I don't even soak them anymore. I just throw them in the oven and bake them.

**Evan Brand:** Awesome. And then probiotics. Do people need to stay on those forever? Or once they fix the issues they can cycle off?

**Dr. Dan Kalish:** If you're eating beans, fruits, and vegetables every day, and fermented foods, then you should be able to get off the probiotics completely.

**Evan Brand:** Well said. And you and I both sell probiotics, and I love that you're able to say that. Because so many people say, "Nope. You need them forever." And it's like, that seems like something is not working. Because our ancestors didn't need a probiotic pill forever.

**Dr. Dan Kalish:** People don't eat beans anymore.

**Evan Brand:** They really don't. The beans have been demonized. Grains too. Rice as well.

**Dr. Dan Kalish:** It's insane. The basic human foods that have allowed us to survive for all of human history. Beans are getting a bad rap. You have to eat beans every day, just to keep your microbiome in balance.

**Evan Brand:** How do you approach rice?

**Dr. Dan Kalish:** You know, they've got this arsenic problem with rice.

**Evan Brand:** Is that even in organic? The Ludwig or whatever brand?

**Dr. Dan Kalish:** Yeah, supposedly it is. I try to not worry about it. I have rice a couple of times a week. I don't eat it every day.

**Evan Brand:** I pressure cook it. I don't know if that makes any difference, but it makes me feel better about it.

**Dr. Dan Kalish:** Yeah. And everything has something in it. So you really can't win. If you tried to have a clean diet, you'd have to go to a different planet at this point. But my body does really well with brown rice, so I eat it a couple of times a week.

**Evan Brand:** I do good with organic white rice, and I pressure cook it and put a bunch of butter in there and I feel ok.

**Dr. Dan Kalish:** That's great.

**Evan Brand:** So don't lose sleep over the arsenic, you're saying.

**Dr. Dan Kalish:** I don't think you can have a clean diet anymore. Most of the environmental toxins that we're exposed to come from air, anyway. So are you going to stop breathing? No.

If you look at the actual toxin burden that makes most people sick, the majority of stuff we're breathing. I eat organic food compulsively. I'm not against organic food. I eat almost all organic food. But it is a relatively minor factor. If you have unhealthy air, you have a much bigger problem.

So you're way better off investing in air filters for your home than you are buying organic broccoli. If you have a financial crunch and can't do both. I happen to be wealthy enough I can buy organic food every day and I have an air filter. But you've got to prioritize.

And the other thing for toxins is almost everybody I work with is dehydrated. If you simply get hydrated, you're going to flush out all the water-soluble toxins right there.

**Evan Brand:** With just water. You're not talking some special super food drink for \$10 a bottle. You're talking water. Good clean water.

**Dr. Dan Kalish:** Yeah. But there is Kalish Method water that's ionized. I'm kidding. No, it's just freaking water. Buy a water filter and drink the water. Don't get the fancy ionizing machines. Those are really weird and bad. Just get a decent water filter that pulls out all the junk. There is no special water. Just drink water.

**Evan Brand:** I know we're probably at the end of time, but you brought up air. So I have to ask this before you go, because you brought it up. Klinghardt spoke about the geoengineering program. He spoke about the planes spraying. He's got friends and colleagues who work for Boeing that are outfitting these planes with barium and aluminum nanoparticles and such.

So he's saying, geoengineering, whether you call it chemtrailing, there's no question whether it's real. Yet I've been laughed at by meteorologists when I try to ask them why do some planes at the same altitude leave trails that cloud up the sky and others don't. What is your approach to that? Do you lose sleep over the planes?

**Dr. Dan Kalish:** No. There are so many other more pressing problems. That's not even on my radar screen. I'm a strong follower of Noam Chomsky. Basically we have two major problems, total annihilation from atomic blasts and nuclear destruction and environmental degradation. And the chemtrails I think are a pretty small part of that whole environmental destruction thing.

I'm more worried about things like coal burning and automobile exhaust. Things that are happening on a massive scale that are impacting every single human being. There's plenty of those things to worry about without getting into the more abstract stuff. Things that we can do something about.

**Evan Brand:** How would you stop the planes? If this is truly going on, there are groups about this where you see pictures around the world. Germany, everywhere. Europe. Everyone is supposedly getting sprayed.

**Dr. Dan Kalish:** Yeah, I don't think it's worth thinking about. I ride my bike to work every day. You can not drive your car. And you can try to be nice to other people and try to avoid atomic weapons being launched or nuclear weapons being launched. So I think there are bigger fish to fry.

And I think the bigger problem, too, is that our brains are not operating at 100%. You see this on social media. You see this in the general media. The American population in general right now is a little nutty. I think that's a bigger danger to the world than anything else probably.

**Evan Brand:** I agree. What is that, though? When you look at the world you say, "Ok, the world is crazy." What do you point the finger at if you had to pick just a couple of things? Do you say, "Everybody has gut bugs changing neurochemistry"?

**Dr. Dan Kalish:** No, I think primarily neurotoxins combined with general social injustice. People are just not happy with their financial situations, obviously, in most of the world. Whether it's Brexit or what you see with Trumpism here in the US. People are unhappy because the world economic order is not working in the favor of all but a few people. I think that's really the bigger problem.

I actually think it's in the process of changing, to be honest. I think we're flipping back now, in the next 10 years. I think my son's generation, he's 19 now. When they're in their 30s, I think there's going to be a pretty big shift back. Like we saw in the United States in the 1920s and 30s. I think there are these cycles that we go through.

We're in kind of an authoritarian money concentrated at the top part now. I think it's going to flip back. That's usually what happens in the United States. Well, since we've formed the country, that's happened in a few cycles, right? I think we're in the midst of one of those now. Hopefully we can get through it without launching a bunch of nukes at Korea or something.

**Evan Brand:** I hope so too. Tell people about your work. You've got the Kalish Institute, which is just amazing. You train hundreds and thousands of doctors at this point. Functional medicine and a lot of your strategies. Talk to us about that. Also any other things you think people should know about.

**Dr. Dan Kalish:** Yeah. I have two websites. One is [KalishInstitute.com](http://KalishInstitute.com). And that's for practitioners that are interested in training, learning how to interpret labs. Learning about how to build a practice. I have two tracks. There's a clinical application track and a business application track for different practitioners.

[KalishWellness.com](http://KalishWellness.com) is my patient website. I work with patients all over the world doing laboratory evaluations. I still do patient consults two days a week. So I'm always looking for new patients to work with, as well.

**Evan Brand:** Awesome. Thank you so much for your wisdom. It's been fun. I look forward to keeping in touch.

**Dr. Dan Kalish:** Appreciate it. Thank you.

**Evan Brand:** Take care.