Learn How To Detect Cancer Early And Save Your Life Transcript

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Introduction to Cancer Check Labs

Welcome, everybody, to another episode of the Exponential Longevity Summit. We are here discussing and leveraging AI to outlive disease and how to live young for a lifetime.

And today my guest is Doctor or Mr.. Rather, I should say he's almost a doctor. Quite honestly, with all of his details in the world of cancer. He's the founder and serves as the CEO and chairman of Cancer Check Labs.

And, Mr. Wright has been involved in the development of his cancer detection technology since 2010. Some of that I met him maybe several months ago, and I was very impressed with his lab.

So it's a pleasure to welcome you to the show. It's a pleasure to be here. Thank you for having me. Yeah, absolutely. So tell the, tell the people listening here.

The state of cancer screening and some of the, issues that you and I are well aware of, but they may not be as well aware of. Maybe you can speak to that for them.

Yeah, sure. So today in the world of cancer screening, there are multiple options that exist. And some of those options are clearly better than others.

And there's reasons for that. And, you know, it looks like a big sea of alphabet soup. You have everything from CTCs to Cfdna to ctDNA to MRI. And, you know, it can be difficult at times to parse through exactly what all that means and how to choose between them and the pros and cons.

So very fundamentally, you know, if you have an underlying solid tumor, lung cancer, breast, colorectal, pancreatic, liver, bladder, brain, all the organ tumors from which 100 million people across the globe suffer annually, the primary tumor itself.

Generally, as we all know, doesn't kill you. What kills you is the tumor sheds tumor cells that circulate through your bloodstream, known as circulating tumor cells, or CTCs, the acronym for short.

And the CTCs spread the cancer in your body in a process known as metastasis. And the metastatic effects are fatal. And that's generally how people die from cancer, not from the primary lung.

Why ctDNA Screening Misses Early Cancer

Now you have to understand what a CTC is to really parse through all of this. A CTC, a circulating tumor cell, is a biological cell. It is a messed up, malignant, dangerous cancerous cell.

But it's a cell. It has the components of a cell. It has a nucleus. It has a genome with the DNA sequence. It has a membrane. It has cytoplasm. So on and so forth.

When those CTCs are released from the primary tumor for the purposes of metastasis, typically one of three things is going to occur if they don't see a that CTC will go through cell at that ptosis which is programed cell death, as we all know, which is at which point it will break into little bits and pieces, including its components, including the genome, which will be dispersed into the bloodstream, be that will be eaten by our white blood cells or our immune or immune function as they're supposed to be, or macrophages, which will literally either look like a Pac-Man coming in to crunch them and break them, or the CTCs will be invaded by the white blood cell that will essentially go on a suicide mission, blow up and blow up the cell, at which point the cell and all of its components, again, including the genome, which has the DNA sequence, will break and be released into the bloodstream, or C they'll go through your capillaries, where the shear forces, the physical stresses, will actually fracture the cells

components.

When any of these events occur. Little scripts and scraps of the genome, little bits and pieces of DNA are released into your bloodstream. Those little bits and pieces of DNA are what we call circulating tumor DNA, or ctDNA, a type of cell free DNA.

Cfdna because it's away from the cell. Now, that is not a whole intact cell like a CTC, a circulating tumor cell that is simply scrips and scraps of the genome.

And at that, incomplete scraps and scraps. So when you're looking at tests that are relying on things like ctDNA or Cfdna, the problem you have is they take these little bits and pieces, they put them into a black box, and in that black box they apply a set of algorithms, whether they are AI, artificial intelligence, machine learning, next generation sequencing and heavy computational processing to extrapolate and essentially guess, do we or don't we have a tumor cell?

The problem with that is it is a guess. And that guess is very erroneous, because you don't have enough signal. One of the this is. An interesting point that you bring up, right?

Because everybody can relate to the fact that if you see a tumor, on a scan of some sort, that there's likely a cancer, there are people go in and biopsy, they get.

A. Tumor cells, and then from there they can actually sequence the DNA and demonstrate that this isn't DNA. So people are familiar with that. I think what's a little more, esoteric for them is the fact that that you can pick up, circulating tumor cells even before you would pick up a tumor on an imaging scan, like an MRI or CT or even a Pet CT, which makes working at this, CTC or circulating tumor cell level, very, very appealing because ultimately it's early detection that leads to curative treatment.

And so really, the underlying premise of what you're doing here is how do we actually go early. But then there have been other people that have been trying to go early, right?

There's Grail and there's other tests out there that are looking at the bits and fragments that you're referring to. And so I think it's interesting you're about to contrast.

I think, for the audience, a difference between how we look at circulating tumor cells and the, the veracity with which we can make, the diagnosis of cancer or the evidence of malignancy in the body versus the bits and parts that that are a little more subjective.

So do you want to talk us through that? Because actually, some of the statistics around that are pretty stunning in terms of, you know, what people can actually do.

So there are I mean, you mentioned Grail, which Grail uses ctDNA or Cfdna, however you'd like to look at it. And again, the problem with that is you have very erroneous results.

Four and five months ago at ACR in May of this year, annual American Cancer Research, they were forced to release date. I believe that was with a prostate trial which showed their detection rates.

And, you know, they were dismal. They had a stage zero detection rate of 0% and a stage one detection rate of 3% at a stage two detection rate of 5%, and then a stage three detection rate of 15%.

Grail, False Positives, and Market Skepticism

So in essence, they're missing 85 to 100% of those stage zero two stage three cancers, right? That is useless for an early cancer detection test. Right? Even at stage.

Fascinating, right? Because they had so much, so much funding and really so much they made such a splash in

the market. And this is why if you're a consumer, you're listening to this or even talk to your doctor, it's really important to understand what is the data.

And interestingly enough, the way they reported their abilities to detect cancer was really very, very skewed. I mean, statistically skewed. So you have to be skeptical and you want to talk about that for a second.

Yeah, absolutely. I mean, you know, first of all, they made the splash and the market in my opinion, illegitimately. So what they were doing is they were running a large trial in the UK with the NHS, the national health system.

That trial, comprised of 140,000 patients, for which the UK government, the NHS was paying them 150 million GBP. And that's about 200 million USD. If you work that out, that turns out to about $1,400 a test grail only retails for 949.

Nobody could really understand why the UK government was paying such a large 50% premium on these tests. To run a trial for 140,000 people for a startup.

Recently it came out in the British Medical Journal that the reason that happened is because the former Prime minister of the UK, David Cameron, was a paid adviser to Illumina, the parent company that bought them at that time.

It was essentially illegitimate, illegitimate procurement and potentially that is being explored in the ethical scandal currently. What they did was but when they did that, they essentially followed the third US playbook.

Theranos duped the market. The way that Theranos duped the market is they went out and they got a large anchor customer, Walgreens, and they got that large customer through illegitimate means.

Clearly, the market assumed that if such a large, credible anchor customer had adopted this or was going to adopt this, it had been properly vetted and there must be some validity to it.

Grail thought this was a great playbook and went and did the same thing with the UK. Doctors across the United States said, well, if the UK government's going to pay so much money to run this large trial, clearly they've added it to some extent.

There must be some validity here. And that is what started their splash and their initial uptake. Now what's happening several years later is the data is coming out that, you know, they've released data that shows a 56.9% false positive rate, right.

It's dangerous. Yeah it is. And and it was interesting to us because we never embraced Grail. Quite honestly. We were always suspicious ever from the get go.

And just based on the technology and also the way they were reporting their numbers, none of it looks kosher to us, quite honestly. So anyway, it's fascinating.

So as you're if you're listening to this, we're just, allowing you to understand that, number one, it is possible to detect, cancerous cells or malignant cells in your body at stage zero before you really have, quote unquote, clinical cancer.

And that's the point at which you actually want to catch this. Right? So talk to us a little bit about what you're doing that cancer check labs utilizing the circulating tumor cells and some of what you're finding there.

Sure. So so first off, you know, when you're dealing with something like cancer, you do not want to guess. Let's start there. So the reason we look to extract all intact circulating tumor cells is because it is cellular tissue.

CTC-Based Detection and Lab Workflow

And we take those cells, that cellular tissue, those CTCs, and we place them physically on glass slides, as you saw in our lab. And we take those slides and we stain them just like you would tissue placed them in the palm of a pathologist just like you would tissue because it is tissue and allow that for examination under a microscope with the slides, with the images.

That is akin to a whole body tissue biopsy. But it comes from a blood draw, because the novelty of this is that we have figured out how to extract those all intact circulating tumor cells at scale, from a large enough sample such that we can actually examine them.

And that's let's let's just I'm going to interrupt you again for just a second, because this is very important for the audience to understand this idea of doing this at scale.

So it's possible to take a small sample of blood and look for circulating tumor cells. And because there may not be many of them and it's a small sample, you might you might miss them. You might miss characterize them.

So tell us a little bit about the sample size that you use. We use a sample size of 40ml 40ml. So that's quite a bit. That's like four big test tubes.

Or ten normal tubes. Right. And so you know for beasties or blood collection tubes. And the reason we do which about half of the annual physical because you want statistically significant sample.

Now the reality is you could potentially do it with less. But you don't really want to take that risk. On the sensitivity of the test. We've detected stage zero breast cancer CTCs in those blood samples.

We have detected CTCs in one millimeter prostate. We have detected CTCs before they show up on imaging, as we should, because you're testing them at the cellular level, you know, imaging one of the constraints you run into is imaging cannot detect at the cellular level.

It simply does not have enough resolution. There are billions of cells that are not billions of pixels. It's literally impossible. And, you know, that's when you get into some of these other modalities that try to use imaging for screening, which I don't think makes a lot of sense.

There's a whole host of companies out there that are trying to do full body MRI to screen for cancer. So the problem with that is many. First of all, you know, MRI are very sensitive on soft tissue, right.

As we age we develop our bodies, change. We develop lumps, bumps, cysts, you know, like comas. It does not mean we have cancer. So people go into these tubes, which often are not these spa like experiences as they're marketed to be.

They're more like you're wrapped into a straight jacket because you can't move and strap down for about an hour in a tube, which people have problems with because many people are claustrophobic.

They come out and they learn that they have 17 lumps and bumps. Well, that's great, except what do you do with that information? That's right. Your your physician is not going to chop you open and run 17 biopsies.

And so now all you've really done is created this sort of anxiety, almost a pseudo false positive risk, which has little actionability and by the way, for something that purports to be a cancer screen, you fail to tell them whether or not you believe there's cancer.

And there's a flip side to your coin to what you're discussing, which is that a lot of people have a a full body MRI scan done and then be told that everything is clear and you have no cancer and you have nothing to worry about.

That's right and right. And so you have people that are actually being given misinformation on both sides of that coin. Either you've got something that doesn't amount to anything or you don't have anything.

And I haven't really looked with the resolution to actually determine whether you do or you don't. So I think if you're listening to this, you know, many, many physicians and groups and even longevity groups are out there touting the effectiveness of full body MRI eyes, and they have a place they can be useful in certain situations.

We've done them for certain people, but it's certainly not as a cancer screening tool, certainly not as a cancer. And you certainly can't walk out of one and say, oh, I have a clean bill of health.

You certainly cannot say that. So just so. Because of the resolution. That's right. You can't see what you can't see. You get false negatives. That's right.

And false positives to your point. So, so you know this raises a question for people. Everybody wonders well don't I just doesn't everybody have some cancer cells I mean only making cancer cells.

Does this occur all the time. And then our immune system kind of knocks them out. And maybe as we get older, our immune system starts to lose their ability.

And cancer gets more sophisticated in terms of kind of shrouding itself from the immune system. And, and what's the what's the take on that? And you do you find that everybody you test has some circulating tumor cells or what's the story there.

No. Healthy blood does not have circulating tumor cells. So now now however, this is very nuanced. And this is where, you know, a lot of people unfortunately get confused.

Everyone's body, you know, is in constant cellular turnover. We are living biological organisms. Cells die through programed cell death, apoptosis, new cells are created, so on and so forth.

Imaging Limits and MRI Screening Pitfalls

When that process occurs, there's always a risk that an erroneous replication, erroneous cellular replication will occur. A mutated replication which is effectively a pre cancerous cell.

Now our immune system's job is to destroy that cell. And it does most of the time, which is why we are not all living with quote unquote cancer. Now here's the thing.

When that occurs, it occurs in your tissue. Let's say it occurs in your lung or occurs on your skin or in your kidney or your pancreas. When those pre-cancerous mutated replications occur, your immune system will generally kill them.

Unfortunately, sometimes those cells will evade your immune system, multiply out of control, and develop a mass, and that is a solid tumor sitting on that organ that is different than a tumor cell floating around your blood.

Your natural blood composition should not have tumor cells in it. If it does have circulating tumor cells in it, they came from somewhere in underlying tumor.

They were released. They were shed because all tumors must shed to spread. It is the fundamental known tenant of metastasis. You cannot go with stage progression without shedding.

And so go ahead. I was just going to say an interesting enough. Even though you have to have a tumor to shed tumor cells, that tumor can be small enough that it still wouldn't be picked up on an imaging study.

Just so you're aware. Right? So it's just because we're talking about a tumor burden. We're not talking about one that could be detected with a MRI or Pet CT or a CT scan.

Just so the audience is clear on that. That's right. And then if you have these tumor tumors being formed, these tumors have certain markers, for example, epithelial markers because they're tissue cells.

So curtains up Cam so on and so forth. So when those types of tumor cells are released into the bloodstream that have epithelial characteristics, for example, that is unusual.

That should not be there. Your natural blood composition, blood chemistry does not have those types of cells. So when you see an epithelial tumor cell in the blood, you know that it came from an underlying tumor, which was formed because your immune system failed to kill off that initial tissue mass.

That was that erroneous replication. Yeah, exactly. So in the, in, in the testing that you do, you're basically, going global with your testing technology.

You're located here in Dallas, Texas, and you were just telling me you're going to Canada and now England. And I think you said the Middle East and, places beyond.

Right. And the opportunity for you is to go global with this. Of course. So, so tell us a little bit about the sensitivity and specificity of your testing, how that compares, so that people can put this into a sense of, you know, comparison in context.

Sure. So let's let's start with specificity. Since since false positives are generally more dangerous than false negatives, the reason for that is they cause unnecessary interventions which are injurious and costly.

Now, on the specificity side, we have near perfect specificity. The reason we have near perfect specificity is because tumor cells are morphologically distinct from healthy cells.

Tumor cells are larger, you know, 20, 30, 40 micron, not 8 or 10. Tumor cells are multi nucleated. They have five six heads five six nuclei instead of 1 or 2.

Tumor cells, or have high NC nuclear cytoplasmic ratios. Because the nuclei comprise so much of the cell 8,590%, rather than 15 or 20. Tumor cells are hyper chromatic.

They have too much DNA because they're so heavily nucleated. These features are so pronounced that an elementary school child could look at it and go, that's weird.

Healthy Blood vs Circulating Tumor Cells

I'm a board certified pathologist that is licensed and spent their life learning how to examine tissue and cells is practically never going to mistake a tumor cell.

For a healthy cell, it is an elephant and a rabbit, and the result? You end up with near-perfect specificity. But in order to do that, you need to actually have the tissue, the cellular tissue, the cells themselves, not scrips and scraps of DNA.

So tell us about this, because when I was visiting your laboratory and I have no financial interest in this company, by the way, this if you're wondering, I have no financial interest here.

But when I went to your laboratory and I was looking at your, technology sheet, you have a way to filter, cells based on size. And so, you know, if people are wondering, well, okay, what do they do?

They just look through raw blood and see if there's a big, hairy cell in there. No, that's not exactly how it works. Tell them exactly how it works. So essentially there's a blood sample that comes in.

That sample gets processed in the lab. Over the last 14 years, we invested about $80 million over a series of companies in order to develop a technology that can extract circulating tumor cells, so they share certain physical and mechanical characteristics, size being one of them, but structure, rigidity, lack of malleability, lack of deform ability, they're big, they're hard, they're stiff.

They don't bend. Those parameters enable us to selectively capture them on our proprietary filters that we use in our process. And so as a result, we will extract these atypical circulating tumor cells.

Once you extract the atypical circulating tumor cells, much like you would extract tissue from a surgical tissue biopsy, you look at it with standard pathology.

You use the same exact stains you would in a pathological analysis for a surgical biopsy. You're looking at morphology. You're looking at those types of stains.

And you are also looking at immuno markers on the cells to see what they express. And once again, if those cells are expressing markers that are characteristic of tumor cells, then those cells should not be in your healthy blood composition and were released from an underlying tumor.

Right. Identify it. So, what percentage of the samples that you're processing and, having malignant cells in them because people are being screened by their physicians, as I mentioned, you're going global.

You're not completely global yet, but you're you're signing up more practices. You have more samples coming into the lab. And I will say you have more space to grow, to be able to process more.

But the point is, yeah, you're processing these. And what percentage of, tumor cells, or samples coming in and have circulating tumor cells in them. So, so the general incidence of cancer in the population is 2.1%.

Now, that is that is the overall general population all the way from zero to whoever is living. Most of those patients obviously are kind of let's say 40 plus, right?

Of course you have the outer cancers, but that's not the vast majority of them. So really, if you were to cut the population in half, you would double the incidence rate above 40.

So 2.1 would become 4.2. Discount that a little bit for you know, pediatrics and people under 40. So it's about four ish percent in the general population we are seeing about 6% and change it's higher.

And the reason we are seeing higher as we should is number one, we are more sensitive because we have cellular detection, which you will not see on imaging today.

Those numbers in general population are constrained by imaging.

Sensitivity, Specificity, and Sample Bias

The ability to actually detect it, which as we've discussed, is it's not as sensitive because of the limitations with resolution. See higher because of circular, cellular detection.

Number one. Number two, we see a little bit of sample bias because people that are willing to pay for a cash pay test to go screened for cancer typically have some concern, they may have a family history, they may be smokers, they may have occupational hazard like a firefighter.

And so when you start compounding those factors into it, you start to see the incidences rise a little bit. Yeah, exactly. I would think there is a, testing bias there, right?

People that can they can one right to check, but also people that have the concern to want to write the check. Right. So. Right. Yeah. Exactly. So, You do have circulating tumor cells.

What what's what's the strategy now for them. Right. Because again, just because you have circulating tumor cells doesn't mean you have full blown cancer in a way that we would think about it like, it's stage two A or two B or whatever.

It's not that necessarily. And if you're going to have an opportunity to intervene, this is what this is. When you want to intervene. Right. So this is like the perfect it's like finding heart disease early is like endothelial dysfunction is the earliest sign of of cardiovascular disease.

That's when you want to intervene. So we're talking about something that really is giving you a leg up on this whole fight with cancer, so to speak. So what are the options now for people when they discover that they have these circulating cells.

So so if you discover them first of all the earlier you detect it the better, right. So so early detection obviously is the cure to curing cancer. You know resolving cancer.

Yep. Zero survival rates. And we have detected CTCs in stage 0 or 99%. Now if we detect it right at that point, that's where you're going to see actually a rise.

I think when it's early, type of work that you're doing, just like a functional medicine, because this is where traditional medicine will struggle a little bit, typically what will happen and you'll get a positive after you get the positive.

The physician will want to look for it in imaging and they will image now the best case scenario, ironically, is they can't find it because if they can't find it, then you've really caught it at the cellular level before it's even grown large enough to be imaged.

Right now, traditional medicine would say you're going to monitor and they'll put you into some kind of monitoring protocol. The imaging that usually happens on the first time they have a positive is a pet CT with contrast.

That's kind of the highest resolution. And they typically go from base. It's called the top of thigh because they want to look for all of your different organs to see where it may be.

Sometimes physicians will ask, well, can you give some guidance so we can limit the imaging? But the reality is you don't want to limit the entry because you're not just looking for the primary.

You're also looking for secondary and tertiary tumors, metastatic tumors that maybe the body. So you need to be comprehensive right now if they find the tumor, depending on what type of practitioner they have, they will go into a treatment protocol.

That treatment protocol could include, you know, traditional medicine, oncology, functional medicine, naturopathic. I read they call me empathic integrative combinatorial post-op protocol.

We actually provide a complementary second floor to all positive patients anytime within 12 months. Because post the protocol with the practitioner and the patient need to know is did it work?

Are the gone. And you know hopefully they are and hopefully it's negative. But even if it's not if it's positive, you need to know that because that means you really need to either extend the protocol, alter the protocol, or both.

What a Positive CTC Test Means

Now in the scenario where you have a positive and you cannot find it on the imaging because it's very early, that's when you want to modulate the immune system upward.

And that's where the type of work that you're doing becomes very important. You know there your immune system job as we talked about earlier, is to kill off these cells.

And your immune system actually does do that on a routine basis, which is, again, why we don't all have cancer. And so if you modulate the function functional medicine of your immune system to be potentiated upward, as it should be, the goal in the hope is that you do actually have your own body resolve it without having to introduce

highly toxic therapies or therapies that may introduce a lot of side effects later on. Yeah.

Yeah, exactly. So there are many things we can do to actually characterize the immune system, the status of a person's immune system, and other things that we can do to to improve the immune system.

And it's interesting, one of the things that will, correlate with a weakened immune system is shortening telomeres. So when you have short telomeres and you do, you know, a study through one of the major universities here in the U. S., you can actually see, that the immune system itself is becoming senescent.

And that can actually re rebooted by read lengthening telomeres, which is quite fascinating to see. In addition, there is the ability and I know that your lab is looking at this to start to do DNA characterization of these cells.

And there are other labs around the world that can do this as well. And when you have that information, it enables you now to have specific targets that target solely the tumor cells.

Right. And you can do, lots of different things. You can even create vaccines to these cells. You can create something called S.a.t.s, which are these supportive oligo, nucleotide therapies that go in and make it difficult for these cells to divide.

So if you're listening to this and you're thinking, gosh, the last thing I want to know is if I have cancer cells, really the first thing you want to know is whether you have cancer cells, because if you do, there's so many things that we could do to be helpful to you. So, it's really quite fascinating.

And in your point about, you know, the correlations for, first of all, between shortening illness and reduced immune function are true. In fact, you know, what's largely even for cancer specifically, what becomes causative is shortening telomeres.

That's right. The telomeres is essentially the blueprint for cellular replication as it shortens your blueprint phase, much like the blueprint for a building fading.

And so the probability of an erroneous replication goes up. And so when you have shortening telomeres that is a risk factor for cancer. Now once you have these to your second point, once you have these, cancer CTCs flowing through your body, we can look at those CTCs that are known to be homologous to the primary tumor, similar because they are literally cells of the primary tumor in transit.

They have the same DNA, the same genome. And as a result, we can look at what is that mutation in that genetic material. And that mutation guides the design of the most efficacious treatment protocol.

I mean, even in typical oncology today, if we were to see Her2 positive cells in breast cancer, we would use receptor. We saw triple negative. We would take a different path with a different protocol.

If we saw these seven mutated prostate cancer, we know that's not responding to hormone therapy. We need to treat it differently. And so on and so forth.

The later detection is that the only way that they can actually get that genetic insight is by biopsy the tissue, the actual primary tumor. And they do do that. And and then, you know, they cut the tissue.

They send it for genetic analysis. They learn about the mutations. But here's the catch. Cancer is evolution on steroids. That's right. It's very fast.

That data is only valid for a short period of time.

Telomeres, Immune Function, and Tumor DNA

And the only way to refresh it is to re biopsy, which is typically not indicated for a variety of reasons, not the least of

which is many of these are older patients that cannot sustain multiple surgeries from a cardiac perspective.

And here's another piece of the puzzle. When you have one cancer, you actually have a thousand cancers because inside that inside that tumor, even if it's too small to be seen, there are different populations of cells.

It's not uniform like one kind of DNA. Right. And so this is why when you treat a cancer or a malignancy with a particular drug protocol or whatever it is, and you're going after it with one thing, there are cells in that, in that tumor that have a completely different DNA sequence.

And so they will survive. And so really what you end up doing is you end up treating the susceptible ones and then selecting for the resistant ones. And this is the history of cancer, as you've seen it play out in your own families and communities. Right. Is that people are treated. Yes.

They're quote unquote cured now, but then it comes back. It's because you've selected for the resistant cells. So to to the point that that's being made by by some, it is that you have to actually keep ahead of this, and you have to be looking at the, as best you can, the full spectrum of the DNA that's represented.

So you can have a concerted effort to actually get ahead of this. And it's an ongoing battle, and it does require follow up testing and things like this. Yeah.

Yeah, that's exactly right. You do do self select when you kill the weaker cells and you let the stronger mutated cancer cells survive and even, you know, even more simply, you know, clinically, you know, you'll have a breast cancer, the breast cancer will have heterogeneity in it.

One half the left side will be triple negative. The right side will be Her2 positive though you don't biopsy the whole tumor. It's a. The that's right. Ample.

So they'll go and treat the Her2. And then they will ignore and miss the triple negative. And it will grow and it will unfortunately become potentially fatal.

So hopefully when we do circulating tumor cell biopsies, which is what we're talking about, we actually get a smattering of cells when we're doing the sequencing on a smattering of cells so that we get, you know, a more comprehensive or complete picture resolution as best we can.

And ultimately, ultimately, it's your immune system that's going to win the day. So you can't be in traditional therapy. You're basically dropping nuclear warheads on the tumor to try to eradicate it, but you're also weakening your immune system, which is exactly what you don't want to do.

And so in the world in which we work, early detection, selective and focus therapy across the spectrum of what we can understand about the tumor while we're raising the immune system up to new levels through many, many mechanisms.

This seems to be the best approach to keep things at bay. I completely agree. And you know, the chemo is a barbaric approach. Yeah. You know, chemo basically is indiscriminate, right?

It will kill open cells. It will kill tumor cells. It will kill all cells. It's highly toxic, you know, to your kidneys, up a toxic to your liver and very immuno compromising.

And that is why oftentimes if the cancer doesn't kill you, the chemo will. Yeah. It's collateral damage essentially. Right. Right. So rather than trying to, you know, address this by destroying our immune system, which is our primary guardian of our body, we should be looking for ways to approach cancer that actually modulated upward, which again is why I say this is where I think we're going to see the rise and are seeing the rise of functional medicine.

Treatment Strategy and Screening Frequency

I mean, today in the medical community, there are. Across the country, there only 13,000 concierge medicine practices that practice primary for traditional medicine.

There's a reason that it has outgrown it by three acts in such a short period of time. Yeah, well, because it works, you know, it really it offers it offers better solutions.

So I really I really applaud you for offering a better solution also, and doing it close to home. I mean, we're in Texas and you're in Texas and we're down the street from each other, so that's actually pretty convenient.

But, you know, do you as a final thought for the for the audience, you know, if you're worried about this, how often do you think people should screen for cancer?

And there's actually a variety of answers here, but I'll let you jump in on that. Yeah. Go ahead. Yeah, I mean that the short answer is, you know, people are going to do this annually because of behavioral training, because they're trained to do kind of annual checkups and physicals.

There's nothing biologically magical about 365 days versus right now. But that's what people will generally do. Now if you have risk factors, again, your smoker, family history, genetic history, occupational hazards, I think you should do it every six months.

The true answer, if you really want to get technical about it, is probably every 90 days. And that's because it's the rate at which your cells replicate different cells.

Every time you have cellular turnover, you have a risk of a precancerous cell. Now, the truth of the matter is, if you were negative today and you did have a precancerous replication that evaded the immune system 9091 days later, unless it's a very, very rare hyper aggressive mutation, it's not going to progress that much.

Between 90 and 180 days. Tumor are generally slow and indolent and develop over long periods of time, many, many years. Which is also why we're able to detect them early at the cellular level.

And so I think anyone that's doing it annually will generally be okay. But if you are concerned and have actual risk factors every six months. Yeah, I agree, I agree.

Well, it's been such a pleasure. So many like hanging with you. I appreciate you coming on the show and sharing your wisdom and your insight and your passion for this.

Quite honestly, we didn't go into your the roots of your passion, but I know they run extremely deep. So thank you for sharing that. Yeah. Thank you. Thank you for having me.

Give me an opportunity to share. Yeah.