

Michael Roberts ([00:10](#)):

Welcome to the Health Connective Show. I'm your host, Michael Roberts. Our guest today is Dr. Ronald Razmi. He's a co-founder and managing director at Zoi Capital, a venture capital firm that specializes in investing in companies that are creating solutions for digital health and AI and healthcare. He is also the author of the now published book, *AI Doctor, the Rise of Artificial Intelligence in Healthcare*. Dr. Razmi, thank you so much for joining us today.

Dr. Ronald Razmi ([00:33](#)):

Thank you for having me. I'm excited to have this discussion.

Michael Roberts ([00:36](#)):

Absolutely, absolutely. So today we're talking about positioning AI enabled medical devices in the med tech market, and AI is like that thing that everybody wants to have, but they're not necessarily sure how to approach it. And so you and your company, you get a lot of the opportunity to review a lot of companies that are making all these promises of what AI can do. You're seeing the real world examples of how they live up to that or perhaps how they don't. So let's kind of start with those types of companies. There's all these companies that are making these promises, but how are customers reacting to these devices that are supposed to solve all the world's problems? Right? There're supposed to do it better, faster, cheaper, somehow better than what's come before. Are customers buying into that hype or do do customers feel as optimistic about it?

Dr. Ronald Razmi ([01:23](#)):

First of all, thank you for having me and this is a topic near and dear to my heart. I spent three years writing a book about it. So I'm interested in every aspect of this. And the question you just asked is, are customers interested in it? Customers could be the medical center that pays to bring the technology in. You could consider it. It's the doctors who prescribe it or it's the patients who actually are the end users of a device. I would say right now, AI enabled medical devices are at very early stages because the regulatory pathway hasn't been fully established. These models haven't been fully tested, even though the FDA provides clearance and allows you to market an AI algorithm, almost none of them have done the type of studies, clinical studies that pharma and medical device companies have historically been required to do in order to establish that the product works in the real world.

Dr. Ronald Razmi ([02:26](#)):

It doesn't do any harm to patients, it has the intended benefits. Right now, the criteria for approving medical algorithms is that you can take retrospective patients, apply the algorithm and show that it was as effective as physicians incalling a diagnosis or reading a scan, that kind of thing. So what's happened is you have over close to 700 applications, 700 AI algorithms that have been FDA approved. It was five in 2017, but for my book, I couldn't find five that had market traction. So the FDA approval does not mean that medical centers will buy it. It doesn't mean doctors will prescribe it or anybody feels that it's safe. Until companies get serious about doing those prospective real world studies documenting the safety and the efficacy, I'm afraid we we're gonna remain in neutral until the investors and the companies get serious about investing in those large studies.

Michael Roberts ([03:30](#)):

I'm come from a marketing background, so whenever we're talking about healthcare, it's always a completely different worldview. Right. But one of the things that we've been talking about sort of in the

marketing world is how much everything changes with AI seemingly day by day. And so you talked about a, a period of three years of writing the book and the world has changed drastically and our sort of general understanding of AI and sort of our general practice of AI. How do you feel like things have changed in healthcare specifically over that period of three years beyond going from five algorithms to 700?

Dr. Ronald Razmi ([04:03](#)):

It's very easy because it hasn't changed. Where the penetration of AI in healthcare three years ago is pretty much what it is today. And a reason for that is because there are structural barriers to the success of AI in healthcare. Number one is fragmented data in healthcare, one piece of data changes your entire picture. If you've been a completely healthy person your whole life, however, in the last week your creatinine went up, the medications we give you, your diagnosis, everything about you is now completely changed. All of that 99.9% of your data becomes irrelevant. So healthcare is a different beast than other than other industries and other sectors where AI you know, could work with partial data and glean insights about your habits and in whatever, whatever sector we happen to be talking about. So because of that, because physicians are ultimately the gatekeepers and they're not comfortable with AI, yet they don't know how to use it, they don't know if it's gonna affect their jobs, their incomes and so forth, they have made sure that they proceed cautiously.

Dr. Ronald Razmi ([05:20](#)):

So there is movement, generative ai obviously, potentially helping with doctors, taking clinical notes, improving coding, prior authorization letters, that kind of thing. I think that's the frontier. That's where we're gonna see the initial impact of this technology in healthcare. But the clinical applications are still far off because we have to solve the data problem first. Regulatory issues, clinical trial issues, reimbursement issues, much remains to be done. And if you are talking about combining AI with a medical device, you're talking about another layer of complexity. So I do not know of a single device in the market where it has a autonomous AI that's been turned loose and say, okay, collect data from the patient, AI, analyze it and you know, do something like give insulin or inject biologics or tell patient to do X, Y and z. I know of devices where AI analyzes the information and serves it up to somebody on the other end who reviews it and agrees with the finding and so forth. That's important to keep in mind.

Michael Roberts ([06:34](#)):

I think there's a lot of fear. I mean, specifically in the medical device industry, you know, you go back to the like robotic surgery and sort of this is what everybody was fearing when you were just talking about that robotic assisted type of procedure. People were automatically jumping forward to, oh, the Terminator is gonna come and do my surgery and, you know, watch out. We're all in peril. So yeah, there's, there's a lot to keep in mind there. Do you see, I guess with all these other areas where you talk about AI tools coming in and starting to help, do you think that's gonna help generate more adoption in the healthcare field? So if, if our field or our different notes are compiled more effectively, do clinicians start getting more comfortable with the concept of AI and that helps us move towards adopting these tools?

Dr. Ronald Razmi ([07:19](#)):

You know, the premise that I lay out in the book, I did not wanna write another book that talks about how AI is gonna transform healthcare. There's enough of that out there. Sure. What I wanted to write about is since I built one of the first companies in the space, and I saw all of the barriers you face when

you bring digital solutions into healthcare, you know, I mentioned some of them unwilling users, fragmented data, having to compete with a lot of other digital solutions that are banging on the doors of these life science companies or medical centers to use their technology. And you need to show you're a higher priority than them. The goal of the book was creating this roadmap about how AI is going to infiltrate healthcare, how it's gonna provide benefit, and what do you need to screen for if you're investing or you're trying to, you decide you want to build a company thinking about the use case upfront and all the barriers and decide if it's a good idea to spend two, three years building something that, you know, at the end of it, you may realize it's works, but nobody's interested in that problem because they have bigger problems.

Dr. Ronald Razmi ([08:35](#)):

They want to invest their limited technology budget in. So from my perspective, if you know you're not curing cancer on day one, if you are helping doctors take one problem and say, right now documentation is a real problem for clinicians, doctors, nurses, whomever, and using generative AI and using ambient technology, we can help solve this problem where ambient intelligence could listen to the conversation and generate a note. The doctor could review, do a good job with that, or the doctor doesn't need to spend as much time editing the note that, and they, they would've, that's a step forward. Look, we've traumatized clinicians and I'm an ex physician. I used to be a cardiologist with electronic health records, poorly designed, terrible user interface. Everything is now manual. Nothing was automated. As a matter of fact, the studies post EHR implementations are telling us it did not improve patient outcomes and it hasn't improved clinician workflow.

Dr. Ronald Razmi ([09:48](#)):

As a matter of fact, clinician satisfaction has gone down because they need to spend so much time typing. When you are coming in from your perspective on my perspective, we live in a world of innovators and people who are constantly thinking about how to solve a problem, how to do things better from their point of view. Every time you come in and you're saying, I have something to help you, they hear EHR how EHR was supposed to make their lives better and so forth. So we have to see it from their perspective and think, if we're bringing something to you, does it automate, does it make your life easier? Does it take away few clicks or does it add more clicks and has it been tested enough that you could trust it and so forth. So if some of these unsexy problems like documentation, coding, administrative type stuff are the front lines of how AI is going to diffuse into healthcare and it, it creates some momentum and some buy-in from people, then they will be more ready to accept the next wave of tech AI technologies, including in medical devices and medical devices are gonna need to do clinical trials to show that combination of a medical device with AI is gonna be safe and it's gonna be a better device.

Dr. Ronald Razmi ([11:14](#)):

I don't see devices being able to get through the FDA the way the standalone AI algorithms have been. Yeah, that totally makes sense. And, you know, making it easier to get through the FDA through these retrospective 300 scan type things hasn't resulted in billions of dollars in value creation. Sure. Because people know FDA has set the bar low, nobody cares about it. Like when you go to sell to medical centers, they know you don't have evidence where it's been used in the real world environment. They know there is not necessarily a reimbursement pathway and so forth. And they're asking for that. They're not saying, oh, you have FDA approved, come on in, come on

Michael Roberts ([11:57](#)):

In <laugh>. Absolutely. Absolutely. If you were advising a medical device company, the road to FDA approval sounds like it's relatively simple and I'm, I'm using air quotes that nobody can see 'cause this is an audio podcast, but right. FDA approval really is sort of your first step, but it's not really going to earn you that trust. So would you just advise people, you know, just go ahead and act like the FDA requires you to have that full body of, of proof, that full body of work showing that yes, in the real world our device is doing everything that we claim.

Dr. Ronald Razmi ([12:30](#)):

Yeah, I mean, however you wanna sequence it, as long as we understand. 'cause A lot of investors poured money into AI companies in the last five years. Mm-Hmm <affirmative>, they saw the FDA approval as the ticket to marketing. Yes, it is a ticket to marketing, but if the, if the users are u asking for additional evidence and you haven't done that, and the investors were under the impression that what with the FDA approval, there was gonna be revenues coming in and market traction. They were not counting on two or three more rounds of fundraising and doing the, the clinical trials. So as long as that's in your roadmap and you realize you're not gonna get adoption and revenues until both of those are requirements, whatever sequence you wanna do it in, it doesn't matter. Let me also say something else to send more chills down your spine.

Dr. Ronald Razmi ([13:24](#)):

You've had companies like Paratherapeutics where they, there were the case study for doing it perfectly. They did the clinical trials prospective against standard of care. They showed efficacy for their digital therapeutic solution and then nobody used them. People would just, the fact that it was for their digital therapeutic for was for substance abuse. It turned out taking medications for your addiction and seeing a therapist and stuff was as much as the, the people with substance issues could handle. Like also engaging with a digital therapeutic tool, changing their habits, putting it into their daily program or however often they needed to interact with this tool just didn't end up being part of what they were interested in doing. So Paratherapeutics went public via SPAC for a billion dollars within a year. They sold all of their assets for \$6 million.

Michael Roberts ([14:24](#)):

The marketing plan can be there, all the promise and all the potential can be there, but the real world is still gonna determine what, what sinks or swims there. So one of the things that you mentioned around documentation, and I wanted to kind of shift this a bit from physicians to thinking about the, the actual like patients and I think what a lot of people are gonna be experiencing in the next few decades of relatives that are having to go and deal with physicians and not necessarily knowing exactly what your relative is experiencing when they're in there. We're starting to engage that experience where you're getting the medical information about a loved one parent, a grandparent, and you're getting it secondhand third hand and just how hard it is for people to be able to like, provide support, provide help to their family, their loved ones that like, hey, the doctor said you shouldn't be eating this kind of stuff. The doctor recommended you do these kinds of things. Our AI tool is gonna really help enable that process as well. Do you think with caregivers being able to be more aware and more prepared?

Dr. Ronald Razmi ([15:24](#)):

Absolutely. I think engagement, ongoing engagement, which is a cornerstone of ongoing care management and it could be ongoing care. It's not necessarily if you get older, you need people to keep an eye on you. AI could do that now passively without using a camera or without using a wearable.

There are technologies that emit radar and infrared into a room and the AI analyzes the signal and can map your entire day. How many times you went to the bathroom, the quality of your gait, how long did you sleep, all of that stuff without having a camera on you. 'cause People hate camera watching them. This is completely passive monitoring. So AI could help with that. And then on an ongoing basis, if you have that kind of information about people's activity, you can intervene at the appropriate moments. If, for example, you notice their, the quality of their gait is deteriorating, staying in bed too long, they're going to the bathroom too often, these are all telltale signs of an impending infection, a brewing infection or perhaps deteriorating musculoskeletal issues and so forth that you can intervene before they experience a fall.

Dr. Ronald Razmi ([16:42](#)):

Or they get so sick that they need to be taken from an independent care facility into an emergency room and you know, losing that patient and you know, every time you go in the hospital you take a hit. So AI is gonna be able to help with a range of things in terms of automatic engagement, the one thing that I'll say is these systems have to be tested to make sure in the real world they work as intended and they're safe. Because if you're gonna rely on it and you're not gonna go knock on somebody's door and make sure they're okay, it's a problem if it doesn't.

Michael Roberts ([17:22](#)):

Absolutely. There's a lot of promise and hype, you know, again, we'll see how real all of that is. But a lot of promise and hype around how AI enabled tools are gonna help us offset the declining number of physicians available, the number of nursing staff available. And so, but yeah, it actually has to, to prove out. Jumping back to something that you were talking about earlier. You've mentioned some of the, the roadblocks, some of the different challenges that that medical device companies that just healthcare technology companies in general are facing. Are you seeing companies get past any of these barriers? Are you seeing any companies have any success in starting to either prove this out or at least setting up some, some blazing, some new trails that others can follow in

Dr. Ronald Razmi ([18:04](#)):

Companies that are taking incremental steps, like I mentioned with the diabetes, where AI analyzes your past sugar readings or glucose readings and then comes up with, you know, what kind of insulin dosage should be given to the patient and then passes this on to a provider that can review it and agree with it or disagree? I think if you're taking that kind of incremental approach in these early days where physicians are not, they don't know what AI is, most of 'em haven't seen ai, that they're not comfortable with it. And also nobody's putting studies in front of them that says, we tested this on, you know, 5,000 patients for six months or a year and nobody became hypoglycemic from our recommendations and we did as well as a doctor and so forth. That's what you need to see for doctors to start feeling comfortable with that.

Dr. Ronald Razmi ([19:00](#)):

So I would say just like we, we said administrative use cases, great place to start, provide value, gain some momentum, and then build up to more complex use cases with medical devices using AI as an enabler to like take an incremental step to remove one step from the process. If some, if you are analyzing the ins, the, the glucose readings, comparing them with insulin dosages given and figuring out what needs to be done. That's a good bit of thinking. You're taking off of the doctor's plate so you

already are making their lives easier. So making their lives easier is the name of the game. And I would say if, don't poo poo that if it's not like solving the entire problem and it's okay, you're

Michael Roberts ([19:51](#)):

In the investment firm. Do you see, I guess people that you're advising, so, hey, we should invest in this kind of company. Are people a lot less excited about the incremental steps? Because it seems like everybody wants to go for the moonshot, everybody wants to go for the fully autonomous whatever, fully autonomous car, fully autonomous surgeon, fully autonomous, whatever that thing may be. Is there room, if I'm a startup and I'm trying to consider like what device I wanna make or what steps to take next, should I be thinking that, will I be successful in raising capital? Will I have a good shot at raising capital if I'm only thinking incrementally instead of going for the big wow factor? 'cause That seems to be the big thing that startups are always after is the big splash. The big wow.

Dr. Ronald Razmi ([20:37](#)):

When we started Zoi Capital and Zoi Capital was brand new. It's only a year, been around for about a year and we looked at a bunch of companies last year and so forth. The premise is that there are not a lot of good investors in this space. The investors in this space are legacy tech investors and legacy life science investors. One day we woke up in 2000, 2011 and there was this concept of digital health and there was not digital health investors ready to jump out there and start investing in these companies. So that's who started investing in this. And then later healthcare ai and neither group has the expertise around the intersection of digital technologies in healthcare. Our sort of point of differentiation is the fact that we built some of the first companies in this space and saw the difficult roadmap. Mm-Hmm. <affirmative> and also members of our team that have been investing in digital health for the last 10 years or so.

Dr. Ronald Razmi ([21:41](#)):

There a very few good investors in digital health and healthcare ai. A lot of the money has gone into the sexy use cases like direct discovery and so forth. And investors have lost a lot of money, especially in the last couple of years that interest rates are up, what valuations are down a lot of the paper valuations when people were bidding up the value of these companies because they were competing for deals, that there was a lot of money sloshing around. Those valuations have now had to be written down dramatically. Sometimes 70, 80 if the company is even around. So you have investors who don't necessarily understand the space, who see shiny objects. Any use case in healthcare, AI sounds really good and could be intoxicating for investors who think they can get, but most of that money hasn't resulted in much and a lot of those billion dollar valuations are now way down.

Dr. Ronald Razmi ([22:41](#)):

So with that in mind, the question is what, what happens next? Well, amount of venture money being invested is way down in digital health. It's been basically 2022 was half of 2021, 2023 was half of two, 2022. So the experience of 2020, the euphoria of 20 20, 20 21 is caught up with everybody. So what's next is I think investors are gonna be more discriminating. There are gonna, they are gonna be open to somebody telling them this doesn't claim to cure cancer. But it solves a tangible problem, which is a real unmet need and it has a chance at adoption because it doesn't need to reimbursement, it doesn't require if d approval and it can give you three to five X your money not a thousand x. Those are longer term use cases. So if you have a lot of money, if you are Sequoia, if you are Kleiner Perkins and you have

a lot of money, you want to invest in these two, \$300 million rounds for drug discovery, AI, I would say L'chaim.

Dr. Ronald Razmi ([23:54](#)):

But if you are, most VC companies, especially a new one like us, we're looking for to, to use our experience in what actually happens in the real world. To invest in companies that are solving mission critical problems that navigate around these adoption barriers that I just mentioned to you. And I think if you want to make money, that's the name of the game. You can plow as much money as you want into a drug discovery company. However, the space is in its early stages, taking these molecules that are sitting in the libraries of drug companies and using AI to figure out which ones might be good to repurpose takes time. And then once you figure it out, you have to take it to a wet lab. And then through clinical trials, you still have to go through all of those steps. AI could shorten the first part of the process and can help with clinical trial operations, but you know, it's gonna be years before you realize if you've had a home run.

Michael Roberts ([24:59](#)):

It seems overall, I think that you're, you're definitely kind of getting across like some caution, some, let's calm down a little bit <laugh> sort of about all of these promising technologies because there is that promise, but as you're saying, there's a lot of barriers here that, that companies, that people, that all of us are gonna have to overcome before we can realize these things.

Dr. Ronald Razmi ([25:18](#)):

Yeah. And there's nothing wrong with that. I mean, I think, yeah, I just had an article published an interview I did with Newsweek. Mm-Hmm. <affirmative>, the title of the article is AI Is Going To Change, is gonna unlock the Secrets of Human Body in a couple of decades. Okay. And when I saw, when I saw the, and the article is about the book on me. Mm-Hmm <affirmative>, but that's the title I was very happy to see. Yeah. The title of the article, which was after a two hour conversation with the Newsweek reporter, I was able to convince the guy, it's not gonna happen in a couple of years. Like this longevity stuff that's become really sexy and a lot of people, I gave a bunch of talks at Davos and it was around these like, sort of sober things that I mentioned rather than, you know, the big promises. But longevity was getting a lot of attention. You know, people think AI is gonna unsolved the problem of longevity. Yes. I think AI is gonna be the, the technology that unlocks a lot of the answers that we're looking for. But it's gonna take, it's gonna take time. So if you tell me physician documentation, I would say the next two to three years, if you tell me longevity, I would say the next two or three decades that

Michael Roberts ([26:37](#)):

Was gonna be one of my questions too, was yeah, like what kind of timeline are we thinking? So Dr. Razmi this was really fascinating. I really appreciate all your insights on this. I frankly appreciate some more calm tones I think around all of this stuff because anytime you do start hearing nothing but hype, all of the walls start coming up. And I think, not just for me, but I think for everybody that's like trying to evaluate how this is actually gonna affect us on a day-to-day. So thank you so much for joining us and that book is AI Doctor, the Rise of Artificial Intelligence in Healthcare. I'll be checking it out. Definitely advise listeners to check it out as well. So thanks so much for our listeners. If you'd like more on the Health Connective show, please visit us@hc.show for previous episodes and Health Connective as a company. Thanks so much.

Speaker 3 ([27:20](#)):

Thank you.