

A sunburst graphic with numerous thin, light gray lines radiating from a central point behind the text.

Healthy Moms Podcast

BY **Wellness Mama**[®]
simple answers for healthier families

Episode 159: How a Billionaire Plans to Fix
Education, Make Disease Optional and Land on the
Moon - With Naveen Jain

Child: Welcome to my Mommy's podcast.

This podcast is brought to you by Good Culture. Good Culture makes amazing cottage cheese. I know, I know, not necessarily two words you would put in the same sentence on everyday speaking. But theirs is awesome, I promise, even if you don't love cottage cheese. Because I used to not. Basically, it's naturally fermented cottage cheese so it's free of gums, fillers and nasty additives and it's packed with probiotics. And because it's made naturally it doesn't have that weird mouth feel that a lot of cottage cheese has. So, I use it all the time in cooking and smoothies as a substitute for other types of cheese, or just a meal on the go. You can find it at Whole Foods and many other grocery stores and it comes in yogurt sized cups too, and those are perfect for meals. Check them out. It's Good Culture and they are available at many grocery stores.

This podcast is brought to you by Beekeepers Naturals. Humans have been benefitting from bees and their nourishing super foods since prehistoric times. From Cleopatra using honey to keep her youthful glow to Hippocrates prescribing propolis to cure everything from sores to bacterial infection. Our healing relationship with bees goes way back. Beekeepers Naturals is dedicated to bringing the age-old benefits of bee products in to modern times. And they offer really high quality propolis, royal jelly, bee pollen and raw honey and many other products. And all of these are sustainably sourced from a company that is dedicated to protecting and improving the bee population. My personal favorites are their propolis spray, which helped me to head off a scratchy throat, and their B.LXR mix which is a mixture of all of those ingredients and it's a natural nootropic that I use on busy days. You can check them out at wellnessmama.com/go/beekeepers

Katie: Hello and welcome to, "The Healthy Moms Podcast." I'm Katie from wellnessmama.com, and I'm here today with a dear friend, and one of the most intelligent people I've ever met. Naveen Jain is an entrepreneur and philanthropist driven to solve the world's biggest challenges through innovation and he doesn't just say that, he actually is. He's the founder of several successful companies including Moon Express and Viome. And fun fact, Moon Express is the only private company with permission from the U.S. government to leave orbit and land on the moon. His newest company, Viome, is focused on disrupting healthcare with the goal of making illness elective using technologies to analyze our body chemistry and ecosystem, and all the millions and trillions of microorganisms, and metabolites that we have.

By identifying these biomarkers that are predictive of chronic disease, Viome is finding that they can use personalized nutrition and lifestyle intervention to avoid the disease in the first place. It's truly amazing. Naveen is also a trustee of the board of the XPRIZE Foundation, which you haven't heard of this. It's really cool. His focus is finding entrepreneurial solutions to address the biggest global challenges in health, education, women's empowerment, and more. And that's only a touch of his bio, but Naveen, welcome and thanks for being here.

Naveen: Well, thanks a lot Katie. It's always an honor and a pleasure to spend time with you.

Katie: Likewise, and I always say, like, Naveen and I are real life friends too. It's always fun to chat, and I love that you guys get to listen in today. But to start, so, can you tell us your story because I think from your bio, people might get the impression that you grew up in a really prestigious family and were given every opportunity in life. And I think that your story makes you even more amazing. So, can you start with that?

Naveen: Yes, Katie, and I don't think it takes a lot for someone to guess that actually I'm from India. And, you

know, to large extent when people talk about growing up poor, they really don't understand what poverty actually means. So, growing up in India, you know, there are many, many times we had no food to eat and we really didn't have a place we called home. We moved from village to village, and more often than not, we lived in the most remote villages in India. And in these remote villages there were no schools and there really were no hospitals, and there were really no infrastructure. You know, schools where you're sitting on the dirt and some elder will come, and they have pity on you and start to teach you things.

And interesting things happen that when you have that curiosity that you are able to absorb and learn, my, you know, older sister went on to become a post-doctorate in applied mathematics. My brother ended up doing a PhD in statistics and computer science. And even though, I wasn't...you know, I will say, I'm a least educated in our family, I still ended up doing the engineering and an MBA. And I came to United States, Katie, with \$5 in my pocket about 36 years ago, and just amazing things happen that everyone in the society embraced me with their open arms, and here I was, a nobody, but society gave me so much.

In any which way you look at it, God has been just so kind to us. And with that kindness, you know, life just became amazingly fulfilling, and I look back today and I see all the things that I have received from the society. I have this so much debt, and every time I think about the people who actually helped me, and I've tried to call them back and say, "What can I do to pay back for you did for me?" And always the answer is, "We don't need anything."

And that to me is probably one of the most, I would say, frustrated things in life because you have this debt that you can't pay back. And that's when I realized actually, I can pay that debt back by paying it forward. And I decided I'm going to dedicate my life to solving the problems that's going to move the humanity forward. I'm going to only do things if successfully we have billions of people around the world. And I'm going to go out and solve some of the biggest problems that are facing humanity, whether it is creating a multi-planetary society so we don't all die as humanity living on a single spacecraft we call planet earth, or creating that...you know, solving the problem of education, solving the problem of healthcare, creating the abundance of food, creating the abundance of energy, creating the abundance of fresh water. And all of them sound like a big problem, but in my opinion they are the biggest and the best opportunity for an entrepreneur to solve these problems.

So, I always believe, Katie, as you know, that doing good and doing well are not mutually exclusive. If you really want to do a large good in the world, you create a for-profit company that is dedicated to solving these problems, because if you are not creating profit, you can only help a small number of people before you run out of money. So, if someday our goal is to help a billion people, you have to create something not only that's meaningful, something that changes the way people live, but more importantly, if success will actually will be able to help a billion people.

Katie: Yeah, I know. And we've had some great conversations about this and you've helped really shift my mindset, because I think it's easy to fall into the idea that the government needs to fix something, or, you know, we need more regulation to fix things. And I feel like you've turned that on its head. And you really believe I think that entrepreneurs truly have the power to change the world in that way.

Naveen: Yeah. And I think what's really amazing is that the exponential technologies are not only making it affordable, but actually making it accessible to anyone around the world to be solving the problems that only could be solved by the large Fortune 500 companies or nation states. So whether you look at today, you know, look at the clean energy. We have been talking about the environment for God knows how long. We signed

the Kyoto Treaty. We signed the Paris Treaty, and we signed that treaty, and we signed this treaty, and nothing changes. The environment is constantly being damaged. And it's not going to be any of these things that's going to solve the problem, it takes an entrepreneur to go out and do that. And if you look at the Elon Musk, he didn't wait for another treaty to be signed. He says, "You know, what if we can actually build the clean electric cars?"

And no one ever told him that in the last century, no car companies have been created. You know, you just don't go out and create a car company. It didn't deter him. And here you look at it today not only he created an electric car company, you look at the market cap of Tesla, is now bigger than Chrysler, and Ford, and GM. So it really tells you that one single person can go make a change. And he didn't stop there. People said, "That's good, you can build the electric car company. Where are you going to get all the batteries?" He said, "I'm going to build the biggest Gigafactory of the batteries." And he said, "What are you going to do with all the batteries you're burning?" He said, "If I can use them in the car, I'm going to use them for storage for the solar thing, and I'm going to make the biggest solar farm company."

So my point is it takes one dedicated person to go out and solve that problem. And so, imagine, one day when we have abundance of energy and so much energy that it becomes like air. It becomes democratized and it becomes demonetized. That means, everybody has access to a free clean air around the world and it is free to everyone. And when you have a free energy, you get the free clean water because even if they're dirtiest water, you can boil it, distill it, and you have a fresh clean water.

So, now you start to think about education, you start to think about healthcare. So, I am attacking the healthcare the same reasons. You look at the Obamacare, a great first step and then, you know, Trump Care comes along and they try to undo everything, and someday we're going to have a Putin care. That's going to go out and do something different, right? At the end of the day, governments are not going to solve our problem. We got to take the control of our own health back, and that's the reason I started Viome, and we're going to talk about a little bit more.

My dream and my moonshot with Viome is really simple. What if together we can create a world where being sick is simply a matter of choice not a matter of bad luck? And I know that is possible because for the first time in the human history, we have the technology at our disposal to be able to look at inside the human body and know what is going on, and to keep that in balance, because if you can keep the body and biochemistry and the microorganisms in balance, we will have no disease.

So, I am really hoping, Katie, that people like you who have dedicated your life to really keeping people well, that I'm so glad that we are all working together in this revolution because it's not one person who can make a difference. It takes a village and more to make that happen. I'm so glad that you and I, and hoping the millions, others that are going to be listening to it, all going to join this revolution and create a world where sickness is going to be a truly a matter of choice, not a matter of bad luck.

Katie: Yeah. It's fascinating, and I do want to like a little bit later on delve into, because I actually stacked Viome against the best blood and genetic testing available right now. And I think Viome was more accurate and much cheaper. So I definitely want to delve into that, but first, the very first time we met in person, I think we had like a three or four hour conversation about education and parenting. And I'd love to share a little bit of that part of you with the audience as well. Because I think, also, if you can change the mindset of parents and they can change the mindset of children, that we can raise more entrepreneurs and world changers.

So I've heard you say things, like, the education system is not broken. The medical system is not broken. They're doing exactly what they were designed to do, and I know that education is your next project after you fix healthcare. But I love if you could like talk us through your philosophy on that and maybe give us some things that as parents we can start doing now to start changing that mindset from the ground up at our houses.

Naveen: Oh my god. So, first of all, going to the education system, Katie, that, you know, our education system was designed to teach us skills. And that was really a wonderful way because in the industrial era, what we needed was people with certain skills, and they were all plug and play. So, people became a plug and play in this industrial society. That means they needed 20 accountant, they need the 5 people with these skills, and they needed 35 people with these skills. And people who had those skills, they can get education, develop their skills, and work for rest of their life and be that productive citizen in the society.

And now, in today's world, when we're dealing with these exponential technologies, it doesn't matter what skills you learn, that skill becomes obsolete every 5 to 10 years. In fact, in many cases, by the time you graduate, whatever skill you learn is no longer the relevant skill. It's already obsolete. In that case, the education system has to fundamentally redesign where it is not about teaching skills, but it's about solving problem. It's about learning to learn. And it's no longer about that unidisciplinary, it's not about being an expert in one field, because most problems tend to be interdisciplinary. That means you have to apply the knowledge of multiple disciplines to solve a specific problem. It's no longer about individual knowledge. It is about collaboration with multiple people with different set of knowledge, with different perspective, solving a problem.

In that sense, the education system that we know of today will completely change where the skills could be delivered by software. It could be delivered on the internet. It could be delivered in any personalized way not based on how...so, it will be personalized to how children learn rather than them adapting to how teacher teaches. So that's really...even though there are lot of other thing that will come about the neural feedback in terms of how are people analyzing the problem rather than simply memorizing the solution. And all that will come about, and that new education system will fundamentally change the way we educate our children.

I'm going to talk about a little bit more about the things you mentioned around parenting. And to me, you know, first of all, I get to brag just for a few minutes about our children, and then I'm going to come back and really give you that from our perspective as our children were growing up, what were the lessons we taught them. And I want...you know, hoping that every parent will go out and take those lessons in the early days of children and start to have those conversation.

So, Katie, as you know, we have three children. Our oldest one is 28 and our daughter is 24, and our youngest one is 21. Our 28-year-old, in fact, when he was 17-year-old, he started something called Kairos society. That's K-A-I-R-O-S, and the whole idea was, can you bring together all the college entrepreneurs who really didn't have the mentors and didn't have the people who could guide them? And he created this organization that is now world's largest college entrepreneurship organization in 150 countries, and he would bring all these entrepreneurs at no cost to them. And they'll bring the best mentors whether it's Bill Gates, Bill Clinton, Richard Branson, or you name every top CEO to help and mentor these students, and then he went on to start a company that got sold.

And now he's starting the second part of the journey, where he's helping these young entrepreneurs start to think about how to solve the world's biggest problem. And I'm not sure, Katie, you saw the video that I posted on both the Facebook and my LinkedIn on him on CNBC and Fox. Where I think, I'm just so proud of what he does. You know, the Silicon Valley has lost its soul when you are going out at CES and they're really focusing on Alexa enabled toilets, or Alexa enabled toasters, as opposed to solving the real problems of the real world. Do we really believe the world's greatest challenge is getting up after poo...after...you know, on toilet, and saying, "Alexa, please flush the toilet." I mean, is that the biggest problem that needs solving?

When you have...you know, people are getting sicker and sicker. You have the one and a half trillion of student debts, and old people can't find affordable housing in New York, or San Francisco, or in cities. Let's focus on the real problem. And our daughter graduated from Stanford, Katie, and she was Stanford's STEM fellow, Stanford Mayfield fellow. She became a youth ambassador of United Nations and she's dealing with the gender equality. So, she's working in a startup company to use artificial intelligence to bring gender equality so that no one knows who this person applying. And it turns out when they use the AI with completely gender neutral away, that people are now hiring more women and more minority that they were completely mentally biased.

And our youngest one, he's a junior at the Stanford now, and he did his first public speaking at TED Talk at United Nations on the power of youth. So now having children as you can imagine, it just brings me so much joy. And if you ask me of all the things that I have done in the world, what are my biggest accomplishments, I would tell you time and time again, it is our children. It is not just about leaving the better country for our children. I believe the best thing we can do is to also leave the better children for our country. So, here you have it.

So, now I'm going to tell you about some of the lessons that as they were growing up. And I recall pretty vividly that as children were growing up in a affluent family because it's really easy for me because I grew up poor. It's easy to see that you will have that hunger, and desire to go out and do amazing things. Then how do you bring that same type of passion into the children when they know they don't really have to work?

So, one of the things I did very, very early was, you know, our oldest one is still 10 years old. I'll sit him down and say, you know, "Ankur, your success will never be measured by how much money you have in the bank. Your success will be measured by how many lives you've been able to improve in your life time." Your self-worth will never come from how much you own. Your self-worth would come from what you have actually created. And if you own a lot and if you haven't created anything, you're still a parasite on humanity, or to some extent, you really are really worth nothing because you haven't created anything. And the day you become humble is the day you really become successful, because if you're still...have an iota of arrogance left in you, then you're trying to prove something to yourself or someone else, and that will never be the true success.

Katie: Yeah, I absolutely agree, and it's so fascinating. And what an interesting case study too because you have adult children. A lot of us listening have younger kids and we're trying to figure out how to navigate this. But you've raised three kids who are successful as adults by the world's standard who also actually care about helping people, and who, from what I can tell, have a great relationship with you and your wife even as adults, which is certainly a goal of mine and probably a goal for many people listening as well.

Naveen: I'm going to continue on the same part Katie since you mentioned. Even when the kids are young, I mean, one of the things that I think the parents tend to do is to give them things or do things for them some time out of guilt because we all of us are so busy. And one of the things that I with all of our children, I try to separate the two parts. I told them from day one that our love for you is unconditional, but our approval is not. That means you never have to ever second guess, do we love you, but you always have to earn our respect, that I'll be proud of you. And that to me was really amazing separation that it doesn't matter. I told them that when you call even to date, it doesn't matter what I am doing. If one of our children calls, I will take that call whether I'm in front of 5,000 people speaking or I'm in a meeting, because there's nothing more important for me to continue to build their trust. It can't be simply the empty words, "I am there for you," but when they call you're not.

So you have everything that you do is not about what you see. They watch you what you do. So, for example, Katie, after my first success that I started a company called InfoSpace, and that company became wildly successful. I mean, at its peak it was worth \$35 billion. Now, I could have stopped at that point and said, "I want to spend time with the children because children are really young." And I could have fallen to the trap that, you know, to show them the love I can guide them as you can educate them, but what they see from their perspective is very different.

So, if I said I want to spend time with children, imagine what they are seeing on their end. When they go to school, their dad is sitting on the sofa watching CNBC. When they come back from home, their dad is sitting, waiting for them watching CNBC. What do you think they're going to do despite what I tell them? They're going to say, "I want to be just like my dad, sit on the sofa, and watch CNBC." It doesn't matter what I tell them. Instead, what they saw was I start a second company, and there's work 18-hour days. Start my third company, the fourth company, the fifth company, and then they realized day-after-day, my dad does things because he loves doing this and he wants to make the society better. And there's no words I could have said that would have made that difference than them seeing what I do.

So, what I tell parents is that, don't use the empty words. Do what you say you want them to do. Be an example. The other only other things that I want to tell you about the lesson that was with our daughter and I wrote an article about that, and Katie I'll send that to you for your readers if they want to read. It was titled, "An entrepreneur, versus his eye-rolling teenage daughter." And to me, it was really interesting that our daughter came to me one day when she was, I think, 15 or 16 and said, "Dad, I found my true passion. I know you want me to do science and technology. I want nothing to do with it. So just get used to it."

And as a father I could have easily said, "You know, sweetheart, tell me what your passion is and I want to find the world's best, and I want to help you pursue your passion." Instead, what I did was very counterintuitive. I told her, "Sweetie, you're too young to have a passion. I haven't even exposed you to the things you don't know yet. So how can you have a passion without even being exposed to everything there else you could be passionate about, you just don't know about them?"

So, just of that conversation, and I asked her to go with an open mind, learn, and to learn, and like things that she's not exposed to. You know, I sent her to the Singularity University to learn about that, and she ended up really falling in love with how human brain works and how the human body works, because her true passion was helping women be healthy and helping women really be successful in their career. And she realized that science and technology are simply the tools to achieve her true passion, and without that, without the understanding of science, she couldn't really be pursuing the passion she wanted to pursue. And I will send

you the link to the article. I think you'll really enjoy reading it.

Katie: Awesome. I will make sure that link is in the show notes as well. From that perspective, I have like kind of a selfish question because I home school our kids, but if you could, using the technology that's currently available and what we have access to now. If you could kind of create a school from the ground up with the goal of teaching these kids to learn quickly, and think outside the box, and be interdisciplinary. Where would you start, and what would that look like?

Naveen: So, I think, again, it will be really the bite-size information delivered in a personalized way. And actually, you know what I do. Let me send you the article that I wrote on, "Forbes" about why education is ripe for disruption, and how to create the next century education system. And it specifically talks about home schooling, and what I would do. But you know, just to give you the synopsis of the thing, interesting thing is to constantly expose them to the different things, allowing them to just learn different things. So, if I were you, I would insist that every single day, they have to watch four TED Talks. They spend one hour for four TED Talks because you're going to get...start to see a different perspective and different subjects, and different disciplines from some of the best people condensed in 15 minutes, their lifetime work.

So, I mean, to me, there is nothing better we did with our children than in the evening instead of watching some soap or some comedy. You'll put the TED Talks and just watch three or four TED Talks every day, and then we'll sit down as just family and just discuss, "What do you think about that? This person thinks this is possible. Do you really think it's possible?"

And really, you know, giving them this idea that anything is possible, the only thing that are not possible are the things that they believe are not possible, because your imagination is the only thing that limits you to what you can achieve. Everything else is possible. Even my mother who absolutely loves me and she told me when I was growing up, "Son, you can do anything. Sky is the limit." What she didn't know was sky is simply the figment of our imaginations. There is no sky. Sky doesn't exist. When you go from here to the moon, you don't say, "Mom, I just passed the sky," right? They don't exist.

Katie: That's funny, yeah. And I love that you use that analogy so much, is the idea of a moonshot, because obviously, there's a lot of metaphor there as far as reaching for high goals and the idea that even if you don't get there on the first try, you're still getting so far because you're reaching so high, but I also love that in a literal sense. You're actually taking a moonshot and you get to land on the moon, which is incredible.

This podcast is brought to you by Good Culture. Good Culture makes amazing cottage cheese. I know, I know, not necessarily two words you would put in the same sentence on everyday speaking. But theirs is awesome, I promise, even if you don't love cottage cheese. Because I used to not. Basically, it's naturally fermented cottage cheese so it's free of gums, fillers and nasty additives and it's packed with probiotics. And because it's made naturally it doesn't have that weird mouth feel that a lot of cottage cheese has. So, I use it all the time in cooking and smoothies as a substitute for other types of cheese, or just a meal on the go. You can find it at Whole Foods and many other grocery stores and it comes in yogurt sized cups too, and those are perfect for meals. Check them out. It's Good Culture and they are available at many grocery stores.

This podcast is brought to you by Beekeepers Naturals. Humans have been benefitting from bees and their nourishing super foods since prehistoric times. From Cleopatra using honey to keep her youthful glow to

Hippocrates prescribing propolis to cure everything from sores to bacterial infection. Our healing relationship with bees goes way back. Beekeepers Naturals is dedicated to bringing the age-old benefits of bee products in to modern times. And they offer really high quality propolis, royal jelly, bee pollen and raw honey and many other products. And all of these are sustainably sourced from a company that is dedicated to protecting and improving the bee population. My personal favorites are their propolis spray, which helped me to head off a scratchy throat, and their B.LXR mix which is a mixture of all of those ingredients and it's a natural nootropic that I use on busy days. You can check them out at wellnessmama.com/go/beekeepers

Katie: Well, okay, so now we've talked about the education system, which is definitely a pet project for me as well and I can't wait till you fix it, but you also say this is about the medical system. So, explain why. I mean, I've heard you say this many times that just like the education system, the medical system is not broken. It's doing exactly what it was designed to do, and the problem is we need to design a new system.

Naveen: So, if you think about our healthcare system was designed when we were all dying from infectious diseases, and it's really an acute...it does an amazing job. There is no medical system better than our medical system when you have an acute illness. You get into the accident, there's no better thing than to go to our current medical system. What was designed for episodic sickness is now have to deal with the chronic sickness. That means, it was designed, when you had infection, and you could go and come back, and be healthy, now people have these chronic diseases. And the irony is, the cure for the infectious diseases is largely responsible for creating these chronic diseases. And the second thing really is that as any system, once it becomes big enough, it becomes an organism in itself, and as the organism gets created, the survival of the organism becomes the sole purpose of that organism.

So, today, if you look at the medical system, there's not...no one has your best interest at heart. There's no one who wants to keep you healthy. So, your doctor gets paid when you go visit him when you're sick. And if doctor keeps you healthy, then they are going to get sick because they make no money. The insurance company has no incentive. People think they save money, no. By law, it's a regulated business. They have to provide 80% to 85% of the premium that they collect. They have to actually distribute that as a patient benefits. That means, if patients are healthy and they are not spending enough money. Then they have to reduce the premium, that means they make less money. The pharmaceutical companies love chronic diseases.

In fact, one of the pharmaceutical company's CEO said, "The best drug that we develop are the drugs that people have to pay for rest of their lives." Imagine what he's saying. What he's saying is the best drugs are the one that keep people sick not cure them. Our medical system even to date does not acknowledge that we, as human body, are really an ecosystem. They don't teach about microbiome to our graduates who are graduating even today.

I want to step back here Katie, just to explain a little bit more about coming from completely outside the industry what I learned. And one of the lesson that I think I might want to, you know, right now just mention is that I personally believe a lot of people get afraid and they don't want to start something because they believe they don't know much about it. And I believe personally that as an expert, you really can't disrupt an industry. Once you are an expert in something and you're good at that, you can all at best improve it incrementally by 10% or 15%. If you want to change something or disrupt something 10 times or 100 times, you have to look at the problem differently and you have to come as a non-expert and challenge the foundation.

So, when I came in to this healthcare industry, I read all the scientific journals. And it became clear to me that all of the chronic diseases there's plenty of scientific literature that says, our gut microbiome...and I'm going to come back and explain to you what that is, that our gut microbiome is largely responsible for the chronic diseases that, we name them. The symptoms are all different, but the root cause is the same. So we named them Parkinson's. We named them Alzheimer or Autism, depression or anxiety, or PTSD, or OCD. We named them diabetes. We named them obesity. We named them autoimmune diseases. We named them cancer, and it turns out all of these diseases are caused by the chronic inflammation, and the chronic inflammation happens because of the chronic imbalance in your gut.

And then interesting thing is not only things like cancer, are caused by the microbiome. So there's a very interesting research that, Katie, I'm sure you saw from the Cleveland Clinic that shows that breast cancer is actually is caused by the microbiome. The most interesting part was there were plenty of research that came out in the last month alone that shows whether the cure for cancer even works or does not work, depends on your microbiome. So, immunotherapy which is anti-PD-1 drugs, whether it is effective or not, depends on your microbiome. The chemotherapy whether it works or it actually kills you, depends on your microbiome. So you wonder, what is this microbiome? And Katie, I'm going to give you a new story that I have never told you and I'm going to hear from you this time, okay?

So, I was trying to explain what this microbiome is, and everybody gets confused. "What are these things inside me? You know, I don't think there's anything inside me because my doctor doesn't even talk to me about that." So, I actually came up with the things. I say, "How were humans created?"

And here's how I think it happened. We all know that, you know, bacteria and viruses had been on planet earth for billions of years or four billion years. That humans are only 200,000 years old. So I think here's how it happened, the bacteria and viruses got together about a million years ago. And they say, "You know what? We're sick and tired of living in these local spaces. We want to take over the world."

And the wise one says, "I think I know what to do." "What?" "I think we're going to create a thing that's going to carry us around, and all trillions of us can be inside it, is going to carry us around. All we have to do is keep this thing healthy. It's going to run around and find the food for us. It's going to keep feeding us the things, and it's going to go everywhere in the world. It's going to poop everywhere. It's going to spread everywhere, and we're gonna take over the world."

And suddenly, they created humans. And now the humans are going out and doing these things. And just like today, we are so afraid of artificial intelligence and you wonder if this artificial intelligence becomes smarter than us, what will happen to the humans? And these bacteria and viruses start thinking about the same thing. So, one of the wise one say, "Master, master, I'm starting to worry that these things that we created are becoming smarter. How are we going to control them? Don't you think they're going to destroy us?" And master says, "Oh, don't you worry. You know, one of our brother is right inside their cell. They call them mitochondria, but it's just a bacteria and interesting thing is that our brother is the one that supplies all the energy to the cells. If they go out of line, we just turn the energy and they are dead." Then the master said, "Wow, that's so beautiful."

That other younger one stands up and said, "Master, you don't realize. They're developing this brain. What are you going to do about that?" He said, "Oh, I forgot to tell you that. You know, we all are going to be residing in their gut, but we've created the Vagus nerve from our gut all the way to their brain and we control what they

think. We control what they're going to behave." "Master, how so?" "Well, remember, how they feel comes from serotonin, we're not going to let their brain produce that, 90% of all the serotonin, we're going to produce that right in our gut. We're going to control how they feel. We're going to go use our brothers like neurotransmitters. They're going to go back and forth. It's going to modify their things, gene expression in their brain and their body. And we're going to control their amygdala, so we know their emotional behavior. We control them. We're going to control their prefrontal cortex so we'll know what kind of decisions they're making. We control when they're hungry. We control what they crave, and we can control all of those things." And all of these guys said, "You know master? We created an amazing thing. We really are going to take over the world, aren't we?" And that's how they all clapped and the humans were created." So, what are you thinking?

Katie: I love it. That's a great analogy, and you're so right because I know you and I both share a love of reading scientific studies, which is probably not a common hobby for people, but there are so many studies. I mean, daily, weekly about mitochondria and about the microbiome, and connecting it. Like you said, to pretty much everything in existence, and I know that was for you, the impetus behind starting Viome. So, can you explain like from the technological standpoint how you're able to address that?

Naveen: Yeah. So, first of all, there are a lot of microbiome companies that have been around for a couple of years, but what happens in the early days of the technology? The first few people who come along tend to be the people who tend to take the technology that's too early and try to sell them as a solution. So that, you know, things like...I hate to name anybody, but companies like uBiome, and American Gut Project. They use a technology that's 10, 15 years old. That doesn't really do anything. It does simply tell you some set of bacteria at the genus level. Like, you have more Prevotella, more Firmicutes, or Bacteroidetes, there's nothing you can do about it. It's like saying, "There are more crime in Newark, and by the way, it so happened that Newark has more women." It doesn't make women criminal. I mean, when did they start to do these things that are really meaningless?

So, what we did was we went to Los Alamos National Lab where they've been developing an amazing technology for biodefense work at the national security. And what they were trying to do was to find out if they were the bad actor that were to get hold of something, how would we ever know what's making us sick? So they developed this technology that looks at the RNA of everything, and as you know, it's not the DNA. That DNA tells you what is possible. RNA is the expression of your DNA that which it tells you exactly what is going on today.

So, this technology allows us to look at every single organism in your gut, whether it is the bacteria, whether it is a virus, or phages, or RNA virus, yeast, fungus and mold. And as you and I have talked about it, the fungus which is called mycobiota not microbiota, mycobiota, is just as important. And the viruses and phages are actually just part of the same ecosystem. And there's no such thing as, you know, one right ecosystem for everyone. It's like going to a rainforest and every square foot of rainforest is very different, but every part of it is lush and green. That means, you can have a completely different ecosystem and still have a healthy, lush and green ecosystem. And that's the reason since our DNA between any two people is 99% same, but our microbiome between the two people is less than 5% same, and that's one reason, Katie, why there's no such thing as universal healthy diet. A diet that's good for you may not be good for me, and a diet that's good for me today may not be good for me in three to four months because in three to four months as you change your diet, your body adapts to it. Your microbiome adapts to it. And then you think they actually start to get imbalanced again because you're only feeding one set of microbiome, and the other one just start to die, and

you have an imbalanced microbiome.

The reason we started Viome was to actually be able to understand everything that the gut...what's happening inside your gut and then we'd look at the host side, how does our body digest fat? How is your body digesting a carbohydrate or a protein? And then we look at all of that stuff and put that under artificial intelligence to tell you specifically, "Should I be eating spinach or not? Should I be eating kale or not?"

In my case, I thought I was eating healthy because I was eating no carbs and I was focused on eating things like spinach, avocado, and oats, and lentil legumes. And when I did my Viome test, as you know, it turned out that I needed to be eating...majority of my diet needed to be carbs, and I need to be minimizing spinach, avocado, oats, and lentil legumes, and I need to be eating more wheat, non-starchy veggies, and the complex carbohydrate. And the things that I really wasn't thinking was good for me, turned out to be the best thing for my body. So, and I think Katie you have your own experience and I would love to hear your experience.

Katie: Yeah. Well, I promised I would share because as you know, I'm an avid researcher, and I always love like just more data and trying to understand things as much big picture as possible. So, for years, genetic testing has been available, and my husband and I got that done early on, but they've also developed much more. They can understand much more based on your genes than they used to and I totally agree with what you're saying, that the genes are just one part and epigenetics is certainly, at least as important, probably much more important. But what was drastic to me?

So, over the years, I mean, we have spent probably thousands of dollars. For sure, thousands of dollars in research of this like advanced genetic testing and interpretation. And recently, I even sent my results to some of the top geneticist in the country just to get their take on it, and the irony is when I did Viome and the first result it came back with, I was like, "I don't understand. This does not even make sense. Like, it's telling me that like saturated fat is bad for me, but I know like the data, most people do great with it. I don't understand." And it was, like, there were just some weird things like that that I'm like, "Why is it saying that?" But I mean, I was listening to it and I did feel better.

Well, when I got the reports back from the three people who are considered the top geneticist in the country. It turns out I have snippets in my DNA that make me particularly unable to digest saturated fats completely. So they actually are terrible for me, but for most people they may be totally fine, and I think that's where the key of the variation comes in. And I just thought that was really striking because when I lined up the recommendation side by side in a chart, which I'll be sharing on the blog soon. Viome was right about all these things even though I didn't understand it till I got the full genetic explanation, but the advantage there is, you know, Viome's a few hundred dollars versus like thousands of dollars. So I could have saved all that time, but it took me actually like six months after getting my Viome results, to fully understand why it was even telling me that, but it turns out it was right. So that was my story that I thought was really striking.

Naveen: You know, as you went through your own testing, Katie, and the things you found out about your gut that most people won't have realized that what was going on because we have been treating our body like a black box and we tend to fall for this fad diets. Somebody would say, "Hey, Atkins diet is good." And the whole country moves to Atkins diet. Then there comes the Paleo diet. Then comes a ketogenic diet, the lectin diet, and there's going to be another one, but the fact you and I both know is that any of these diet may work for some people for a short period of time, but we all know it doesn't matter what the diet is.

People eventually end up going back to being sick because no diet works for a long period of time and no diet is right for everyone. And what really the thing that I find most satisfying, Katie, is that, every day we get emails from our customer that the different symptoms they had because we don't go out and really cure a symptom. We basically focus on making your gut healthy and the body healthy, and the symptoms just seem to disappear.

So, one of the things is that I'm going to send you is that from this woman who went on, "Dr. Oz," and she posted this on her Facebook page. She said, she was one week away from getting a gastric bypass surgery and she decided she's going to give it a last shot to do the Viome. And she did the test and three months after that she followed the diet, she lost 70 pounds, 70, and we didn't focus on her weight loss, she had a leaky gut and she had inflammation. So we gave her the supplements and the food to fix her leaky gut inflammation and she lost 70 pounds.

There's another guy from UK. He just post his YouTube and I'm going to send you link to his YouTube, and say, he's a nutritionist and trainer, advises everybody what to eat. And he said, "I never told anyone that I'm suffering from depression and anxiety. And I got this Viome test when it was available in UK. I tried it and now my depression anxiety is gone and I want to let everyone know that how the things when you eat that I thought were healthy for me because I'm a nutritionist, well, it turned out to be completely wrong because they were bad for me."

So what I'm trying to say is that we don't go out and solve the symptoms because it's not, "Oh, you got this symptom. I have a drug for you," or, "I have a food for you." We go for the root cause and fix the root cause. And one of the women said, "My acne is gone and I'm no longer anxious." Because, you know, my point is we don't go out and say, "I'm going to go fix acne." So, these are just the symptoms of the same thing which is your imbalance in your gut, and the inflammation, and which is what we focus on.

Katie: Yeah, and I think the brilliance there is, that it truly is addressing the body as a whole and I've seen even in the natural health space, or with functional medicine doctors, or leading doctors who are very good at what they do. I think there's still the temptation to always try that same, like you mentioned, the infectious disease one-on-one approach. Even if it's like, "Oh, you need this vitamin to fix this one thing," or, "You need this supplement to fix this one thing," and they're not looking at the body as an organism as a whole, and even have like doctor specifically for the feet. And we have doctors specifically for digestion. And we have doctors specifically for the brain. And really, like those things all are interacting with each other daily.

So, I think that's the brilliance of what you guys are able to do. And I've thought for years that the future of medicine is going to have to be very personalized because we do live in an environment where you're kind of constantly bombarded by all these external triggers that can affect our DNA, or that can suppress different parts of the body. So in order to address that, we're going to have to be able to get varied and personalized, and know specifically what's affecting our bodies individually. So I think that's the brilliance of Viome, and it's been fascinating for me to like stack it up against all the other test out there, and see that it actually played out perfectly, and it knew exactly what it was doing.

Naveen: Well, Katie, you know, I think just like the education system, we have all these experts and say, "I fix your heart. What are you complaining about? I don't know anything about by fixing heart I screwed up something else, that's none of my problem. Go to kidney doctor." Or if you see I have this acid reflux they say, "Oh, just take this Nexium." And they don't ever say, "Oh, now if you have a liver problem, that's not my thing."

Go talk to a liver doctor."

Katie: Yeah, exactly. And you also mentioned AI. I wanted to make sure we circle back on that because, I mean, I know that could be a whole podcast in and of itself, but Viome is using AI in a really responsible way that it's going to actually help it advance its ability to make recommendation. So, can you explain how that works?

Naveen: Yeah. So, Katie, there's two things. I mean, as you can imagine the amount of data that we are getting. So, think about every RNA, every base pair of every organism in your gut, and soon we will doing, by the way, without using the blood transcriptome, we'll be able to look at the gene expression of your mitochondria, gene expression of your blood. We'll be looking at metabolites which are small molecules in your blood, in your urine, in your stool, and all this data that comes in, there's no human being can ever digest that data. So what we do is, we go basically put this data with artificial intelligence and we do something very, very smart. We don't go out and say, "Can you tell us what, you know, is this thing causing this?"

We let the data tell us. So we said run thousands of different ways and find what do people have in common. That means, when you start to see lot of people are clustered together, we say, "What is so interesting that all these people are in this corner?" And we'll suddenly say, "Oh, they're all producing low butyrate." So, what I think I forgot to mention was, we don't just look at the organism. We look at how active they are and what they are producing. So we look at, is your gut producing low butyrate or high butyrate? Is your gut producing LPS, which is very inflammatory, or, is your gut producing things like propionate or other short chain fatty acids, or vitamins and the nutrients?

And based on that what's lacking, we recommend the food to actually go out and fill the gap. So the reason we need the artificial intelligence is when you have all this data, it's allowed us to find what are the things lacking, what is too high, what is too low, and what is really related to what. So, if everyone who has causing about the brain fog, happens to have low butyrate and high LPS, then we focus on reducing the LPS, increasing butyrate, and that brain fog is gone.

Katie: And that's so fascinating. And for anyone listening and for sure these links, everything Naveen's mentioned will be in the show notes at wellnessmama.fm. You can also find Viome directly at wellnessmama.com/go/viome, or just Googling Wellness Mama and Viome and my article will come up about it. But I think, Naveen, also because the other advantage of this is you've guys have been able to make this more available and less expensive now that you're being able to reach so many people. And so, can you mention that, just explain to the audience how they can get tested?

Naveen: Yeah. So, Katie, this interesting thing is, an advanced technology of doing the complete RNA sequencing would cause about \$10,000. Then we launched because we got this amazing technology out of Los Alamos National Lab, which is funded by the taxpayer and they spent hundreds of millions of dollars developing it. We were able to essentially get their technology and we thought we could do it for \$1000.

So we launched things for, essentially, four or five months ago for \$1000. Today, you can have that service for \$399. So you can go out for \$399 and get the complete thing done. Your metabolic intelligence test and a gut intelligence test, and you get all the results and the recommendation right on your app, on your phone, or you get them on your browser.

In addition to that, we suggest that people do the test every three to four months, and we in fact lose money on the subsequent test, but we make it available to people for \$199. That means, the first test is \$399 per year, and then you can do as many test as you want during the year for only \$199. And to us, that really is our way of giving back. And my hope is that in the very near future, the cost will come down as more and more people join. The two amazing things happen, not only people get better themselves, they're also contributing to the rest of the humanity because once the artificial intelligence get access to 1 to 2 million people's data, it's going to get even better and even more finely tuned. So you're not only contributing to making the humanity better, you're making yourself better. And I cannot think of a better reason to go out, and to some extent, join this revolution to keep yourself healthy and contribute to making the humanity better in our lifetime.

Katie: Yeah, I agree. I'll echo that, and please check it out. It's been really fascinating for us to get tested and to see. And I think it really will benefit millions and millions of people. And I'm going to put you on the spot again as we wrap up. I want to respect your time, but to the hundreds of thousands of people who are listening to this episode just this week, I would love if you could have them take three steps or make three shifts in their own lives to improve the world for all of us, whether that be health, education, parenting, whatever, where would you have them start?

Naveen: So, I will say, you know, first of all people to know that happiness is a choice. That means there's nothing external that will ever make them happy. You have to make a decision to be happy. Always feel blessed. Count your blessing and gratitude. So gratitude is one thing I would say that every night before you go to sleep, ask yourself, "What are the five things that I'm so blessed and I have a gratitude for?" So that's the one thing I would suggest that take a daily inventory of what is the blessing and the gratitude you have, before you go to sleep.

Number two things I would say is, do something for others without expecting anything back. There's nothing that will give you a long lasting happiness that comes from releasing the serotonin. That means you do something for someone without expecting anything back. That means, don't build the transactional relationship. You know, next time you're in the Starbucks line, buy the coffee for the next person who comes in, and just walk away. You don't have to ever even have a conversation. That type of things when you start to do things for people, you start to spread that idea of doing good in the world.

And the third thing I would say is, dream really, really big, because there's no dream we can't achieve. To me, the dream is so big that people think your ideas are absolutely crazy because those crazies are the ones who actually end up changing the world. Never ever be afraid to fail because you only fail when you give up. Everything else is just a pivot. That means, anytime, the idea that you have may or may not work, or any idea that does not work, is simply a stepping stone to a different idea and a better idea, and a bigger idea. So, go out and dream big and never be afraid to fail. Go out and then count your blessings, and do something for someone without expecting something back. So those are the three things, Katie.

Katie: I love it. That's perfect and I think it's a perfect place to wrap up. But Naveen, thank you so much for your time. I know you're one of the busiest people I know and I appreciate so much your time in being here today.

Naveen: And, Katie, I'll send you a bunch of links and also some of the testimonials from our customer that I think that your audience will enjoy. So, I really appreciate you taking time to talk to me. And if I may wrap up

and say, "I love you, Katie."

Katie: Oh, you too, Naveen. Thank you. And for all of you listening, everything Naveen mentioned will be in the show notes including the link to get the special...the new discounted offer on Viome. So, make sure to check that out, but thank you again Naveen and thanks to all of you for listening. And I will see you next time on, "The Healthy Moms Podcast."

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.