



THE FAT SUMMIT

Separating Fat From Fiction

Transcript:

**Interview with Deepak Chopra, MD.
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**Interview by Mark Hyman, MD
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Dr. Hyman: Hey, everybody. This is Dr. Mark Hyman. Welcome to The Fat Summit, your chance to separate fat from fiction. I'm here with my good friend, Dr. Deepak Chopra, who is an amazing pioneer in the world of wellness. He has written over 80 books, 43 languages, and 22 *New York Times* bestsellers. I feel like a slacker. I only have nine *New York Times* bestsellers. He's an internist, an endocrinologist. He has really been a leader in the space of wellness, and his new book is amazing with Dr. Rudy Tanzi, which I've read, called "Super Genes" about how to change your gene expression by changing your inputs, your thinking, your feelings, your environment, your diet, exercise. All those things change your genes.

We're going to talk today about lifestyle, your genes, fat, and put it all together for everybody. I think one of the striking things about your work is from the very beginning, you've talked about how to create balance, and you've talked about Ayurveda very early on in your book, "Perfect Health," which I read. It really talks about using food as a therapeutic agent and food as more than just calories. I'd love you to share, from your perspective now after 30 years, how that has changed and how diet is influencing your genes and how you've gathered these insights from your work on Ayurveda and lifestyle and put it together in this new book.

Dr. Chopra: Well, the book is called "Super Genes," and when I say "Super Genes", it's a combination of the activity of your genome, your microbiome, and what we call the epigenome. We are born with 23,000 genes. That's what started our life after your parents came back from that picnic. That's how we started, but then on the way out from the mother's womb, and then shortly thereafter, we acquired 3.3 more million genes, so 150 times more genes that are of bacterial origin. The number of bacteria outnumber our cells 10 to 1, but the number of bacterial genes outnumber our human genes by a factor of 150 to--

Dr. Hyman: So we're less than 10% human then.

Dr. Chopra: Yes, less than 10%. We are a few human cells hanging on to a bacteria colony. We are the awakening of bacterial consciousness.

Dr. Hyman: I love that.

Dr. Chopra: Which decided to say, "Who am I?" Anyway, so that's the microbiome, and then there's what is now called the epigenome which is a shell of proteins outside the gene, and these proteins actually influence gene activity as well. There's what we call traffic of information between the epigenome, the

microbiome, and the human genome through various metabolites, and are produced primarily by the microbiome in our gastrointestinal tract. So the microbiome actually is the first thing that food comes into contact with. The microbiome being the ecology of the Earth, literally, it doesn't like antibiotics. It doesn't like hormones. It doesn't like insecticides or pesticides or petroleum products which go in the making of insecticides.

Dr. Hyman: They're on our food.

Dr. Chopra: Yeah, and it doesn't like alcohol, truly speaking.

Dr. Hyman: That's too bad.

Dr. Chopra: It doesn't like anything artificial. It doesn't like anything that's refined, manufactured, processed, GMO because again, GMO interferes with its ecology. It is the life of the Earth, and when it gets inflamed, it sends out metabolites that cause disruption of the activity both of the epigenome and of the gene directly. In addition, your genome, your epigenome, which is a group of proteins primarily what are called histones, they react to everything from sleep to emotions to stress to exercise to movement to breathing to food, of course.

So this is the integrated activity which we call the super gene. To Ayurveda, Ayurveda has always said food that comes directly from nature is the best food, and that food has six tastes: sweet, sour, salty, bitter, pungent, and astringent. The combination of sweet, sour, and salt, it slows down your metabolism. Bitter, pungent, astringent speeds up your metabolism. Astringent, bitter, sweet is anti-inflammatory, but sweet doesn't mean refined sugar. Sweet means anything that even has a sweet aftertaste. Complex carbohydrates and fats are considered sweet. I read that they use fats like ghee, fats derived from plant products, nuts and avocados. These fats, and ghee of course, which is very concentrated fat, derived from milk, but if that fat is used in the absence of refined sugar, it's what is called lipophilic. It helps the membrane of the cells absorb other micro-nutrients. So fat is good as long as you're not having refined sugar. If you're having refined sugar with the fat, it's devastating.

Dr. Hyman: That's called sweet fat. That's the problem. It's the donuts, it's the flour fried in fat that really causes the problems. It's so fascinating to me that you connected the genes with the epigenome, with the microbiome. It's all one super gene.

Dr. Chopra: It's one system.

Dr. Hyman: Yeah. The power of our diet to regulate that is enormous, and it's affecting everything.

Dr. Chopra: Of course it's connected to every other activity. If you don't have good sleep, you mess up hormones called leptin and ghrelin which not only alter metabolism but change the way you perceive satisfaction from food, what is called the satiety factor, which then builds up the abdominal fat, your belly fat which then becomes an endocrine organ by itself because it's all just steroid metabolism. So how we live our life, how we manage stress, how we relate to other people through love or compassion or joy or equanimity, these things influence everything that's happening in our metabolism.

Dr. Hyman: That's true. I've been reading recently about the social genome, how our social connections, or social relationships, our interactions with another can actually, literally in real time change our gene expression for better or worse. If it's a good interaction, it makes you have better gene expression, reduces inflammation, and helps you be healthier. If it's a bad interaction, it can do the opposite. Is that what you found?

Dr. Chopra: Yes. Actually we started the first study down here at the Chopra Center was just a meditation. Within four and a half days we found that the essential armories which regulate the length of telomeres or chromosomes, it went up 40%, but just in 4 days. This study was in collaboration with Elizabeth Blackburn and her team Nobel laureates, but we had saved the blood, so we sent it to our friends at Harvard, Rudy. Also at Mount Sinai, Eric Schadt. What they found was that all the genes that are involved in the healing or self-regulation, or what you and I would call homeostasis, they were up-regulated. Their activity went up, and all the genes that were involved in excessive or inappropriate inflammation, which is a factor in everything from infections to autoimmune illnesses to inflammatory bowel disease to many types of cancer, those genes went down. In fact, we now have a genetic signature for just meditation.

Dr. Hyman: Amazing.

Dr. Chopra: Now we're doing another study which involves breathing techniques, especially those that involve the vagus nerve. As you know the vagus goes from the midbrain to the lungs to the heart to the abdominal organs. We are finding that even simple breathing techniques like ujjayi breathing, or when you raise your hands up like this and inhale or cat cow in yoga, they stimulate the vagus nerve which changes the microbiome which actually shoots up oxytocin, dopamine, opiates, serotonin, back to the brain. The vagus not only regulates your heart rate availability, which is a measure of stress, but actually helps you breathe slower, stimulates the parasympathetic nervous system, changes the

microbiome, changes inflammatory markers, changes leaky gut, changes the way the brain works. It's amazed that we never knew all this, that yoga did this, but people feel good after yoga, right?

Dr. Hyman: It's true. I love yoga. I do it, and I always feel transformed. It's amazing that not only your genes are listening to your thoughts, but your microbiome, the bacteria are listening to your thoughts.

Dr. Chopra: Yeah, the bacterial genes are listening to your thoughts. What we're also finding is the combination of food and something that you believe in, detox. So if you give people high fiber, if you do a mild cleanse, if give them vegetables that are high in fiber like cabbage or radish or celery, combined with some of these Ayurvedic herbs which are , that then serves as a combination of what we are calling prebiotic, probiotic, and symbiotic. So prebiotic is the high fiber that your bacteria, microbiome, they munch it up because they like it.

Dr. Hyman: It's their food.

Dr. Chopra: It's their food. Now you add to it this Ayurvedic stuff and you have something which is pretty devastating combination for well-being.

Dr. Hyman: It's unbelievable. So you can influence it by your thoughts, but also your diet. That's what's so stunning to me and Ayurveda that as part of the detoxification process called Panchakarma, they use very large amounts of ghee which is a saturated fat that we always thought for years was bad, and yet it's used as a therapeutic agent in Ayurveda. Can you explain that?

Dr. Chopra: In combination with no sugar and high fiber, and all these prebiotic foods, it becomes actually something that facilitates the transport of micronutrients and also become something that is part of the detox. Our new study which is called SBTI Initiative again with Harvard, UCSF, UCSD, Duke, and Scripps, and our own institution. We are looking at Panchakarma. We're calling it SBTI, Self-directed Biological Transformation Initiative. And where we're looking at the effect of Panchakarma, the food, the detox, but also sleep, yoga, pranam, movement, and healthy motions all combined.

Dr. Hyman: That's great. All of it are the inputs for your genes. Now, going back to your training as an endocrinologist many, many years ago, and you practiced and studied diabetes. How is the thinking around diabetes and fat and sugar changed since you started training?

Dr. Chopra: We know that type 2 diabetes is curable, reversible, if you help people achieve ideal body weight. What I didn't know was that when you have

something called leaky gut, for example, which happens when people are stressed, the enzymes in the gut, thanks to an inflamed microbiome, leak into the circulation. They can eat up some of your islet cells, so you can even get type 1 diabetes from leaky gut. We did a study here, a preliminary study where people kept a gratitude journal every night and leaky gut went down and inflammatory markers went down. All this is implications for heart disease, diabetes, not only type 2 but type 1.

Dr. Hyman: Yeah, we've been studying leaky gut in functional medicine for over 25 years. It's really one of the central ways we treat people with a whole host of chronic diseases from autoimmune diseases to mood disorders to weight and metabolism issues. With type 2 diabetes, we used to think that they should be on a low fat diet, right? We used to give people low fat diets, and it actually seemed to have backfired, and now we look at the studies and it seems like its more high fat.

Dr. Chopra: Yeah, high fat, but low glycemic food at the same time.

Dr. Hyman: Right. That's the key.

Dr. Chopra: That combination is the key.

Dr. Hyman: Yeah, the sweet fat is bad. No sugar with your fats; just straight fats. Yeah, it's amazing. In terms of the thinking around how spirituality affects all of this, how does spirituality affect your microbiome, your genes, your health, even your food intake, and all those things? How does that all connect?

Dr. Chopra: Let's define spirituality. Spirituality has been in stages of growth and development. The beginning I think you can justify spirituality as self-awareness; an awareness of body; an awareness of mental space, which is thoughts, feelings, emotions; awareness of relationship; and awareness of what's happening inside you which is some of the techniques pratyahara in yoga, and all those things. This is the wheel of awareness that the Buddha described. There's awareness, and then there's all the things we can be aware of. First are the five senses: sound, touch, sight, taste, and smell. The second is body, muscular, skeletal system which you can develop awareness of viscera which is called introspection. You can develop awareness of mental space and then you can develop awareness of relationship.

All of these things facilitate self-regulation and healing biologically, there's no question about that. That's what we're looking for.

And there are other aspects to spirituality. Intuition, creativity, insight, our consciousness, state of consciousness that takes you beyond waking, dreaming, sleeping, intuition, what is called cosmic consciousness, transcendental consciousness, unity consciousness, divine consciousness. Each of these states has its own biology, has its own biological expression. So as we move into what I call nonlocal sense of awareness, your body actually starts to change physically. You'll experience it more as lighter body, you experience it more as energy, lightness of being, and that has biological counterparts. Now, not many people have studied this. We are beginning to study. We're looking at brainwaves, heart rate variability, and the correlation with breath. It's very interesting that when your breath slows down or when it becomes deeper or more regular, everything changes. Brainwaves, heart rate variability changes, gene activity changes, self-regulation gets amplified.

Dr. Hyman: Yeah. I know you are probably aware of Richard Davidson's work on this; the super Olympic meditators who have been in caves for years, for tens of thousands of hours and their brains look completely different.

Dr. Chopra: Yes, yes. One thing which we are beginning to see is that your parasympathetic nervous system, your breathing, and your thoughts mirror each other. So you can use any one of those whether it's breathing or influencing the parasympathetic nervous system through yoga practices or just calming the mind through meditation. They all synchronize everything else that's happening.

Dr. Hyman: That's right. And you don't have to be an Olympic meditator. They're finding even a few short weeks of meditating regularly you'll see profound changes.

Dr. Chopra: That's right. We saw it in four days.

Dr. Hyman: Unbelievable. So going back to food and diet how does one figure out the best diet to eat to optimize their genes? What have you found in terms of optimizing gene expression, microbiome, and the epigenome? How does that sort of shake out in 2015 for us?

Dr. Chopra: I don't take anything that's refined, manufactured, or processed, has chemicals, steroids, hormones, antibiotics, or is genetically modified. That's a given. If you do eat meat and poultry or fish, use it sparingly. Try and eat fish; high fatty fishes are good, salmon, etc. Then make sure your food comes farm to table. Look at the food. I frequently tell people just look at the food and ask yourself, "If I eat that, how will I feel," not 20 years from now, but one hour from now. Twenty years from now you can say, "Yeah, that's going to cause

cholesterol plaques," but nobody worries about that. How will I feel one hour from now? Will I feel more energetic, or will I feel lethargic? That you can tell just by looking at food. Take a picture of the food with your iPhone, or whatever. Look at it and say, "Does this make me feel vital, energetic, and joyful? Does it make me experience lightness of being, or does it give me a slump? You can tell that just by looking at the food.

Dr. Hyman: That's pretty simple, straightforward.

Dr. Chopra: It's very simple. Secondly, when you eat, eat consciously — what is called mindful eating — because if you're distracted, or if you're upset, or if you're stressed, the same food will be metabolized differently. The neuropeptides that occur as a result of our state of consciousness can transfer the food into any metabolic pathway in respect to what it contains. If you're making a lot of adrenaline or cortisol because your mind is agitated, and you're distracted while you're eating food, the same food can be shunted into a metabolic pathway that is toxic, that can cause inflammation.

Dr. Hyman: So even if you're stressed about your food, and you're stressed about your life, if you're eating good food, it still might not be good for you, is what you're saying?

Dr. Chopra: Yeah, you can get the best food to a stressful person, and they'll make poison out of it. On the other hand, if you're enlightened, then it doesn't matter what food.

Dr. Hyman: Then you can eat bacon? Amazing, that's incredible. I think the diet part is so powerful because it's the biggest thing we have to interact with our genes every day. Like you said, it's the biggest interaction with our microbiome and also our genes. It's really information from the functional medicine perspective. Food is not just calories; its instructions and information.

Dr. Chopra: Yeah, it's consciousness. Because in Ayurveda we recognize that there's a saying, "Food is Brahman." It's consciousness, and so there are foods that will actually cause inflammation not only of the body but also the mind. Body and mind, you can have inflammatory emotions which can cause inflammation in the body, and inflammation in the body will cause inflammation in the mind, and food affects that.

Dr. Hyman: Yeah, it's powerful. As you've learned these concepts, how have you changed your own diet and lifestyle? What do you find yourself doing that's different?

Dr. Chopra: I grew up in India in a warrior family, so we were pretty heavy on meat in those days when I was a child. But of course, it wasn't manufactured; it was what was brought to us from the farm. Over the years, though, I've realized that a plant based diet is much healthier. I've gone in the direction of more or less eating less meat and sometimes not meat at all. If I eat protein, usually it comes from plant-based sources. I enjoy avocados, nuts, non-GMO soybean, etc. I enjoy fish occasionally, but I eat one big meal, and usually that's at lunch time and at dinner, I might have a soup or a salad or a soup and a salad, but light, usually around 6:00, before sunset. So when I go to sleep, my body's enjoying sleep instead of metabolizing junk food. Over the years, I've learned also not to stress about it. I can always find yogurt, which I love which has a lot of these probiotics. I frequently drink kombucha tea, and there's an Indian fermented drink from carrots called kanji; we make it at home, and it's a very powerful probiotic. Kimchi once in a while. So those are the things that have really started making me feel much more energetic.

Dr. Hyman: That's great. Yeah, it's amazing how even as we get older, we can change and get healthier when we start to fine tune our diets. That's the most powerful strategy, and it's interesting, you say you eat a lot of fats. You eat avocados, you eat nuts, and you eat fatty fish. You probably have olive oil, and you have ghee?

Dr. Chopra: I occasionally have ghee, but I will swallow olive oil. I will even drink olive oil once in a while.

Dr. Hyman: It's really interesting how we've sort of shifted our thinking from fat being bad to--

Dr. Chopra: And olives also, just eating olives.

Dr. Hyman: It's great. I think that when I look at my own diet, I've changed it over the last 15 years, as we've begun to understand the dangers. Even a lot of starches or tons of grains or starches. Pasta used to be a health food, and now I've switched. As I'm older, I'm 55, I've actually gotten more lean, more fit, more healthy, the more fat I eat, and I've lost the love handles, my numbers look better, my energy's much higher, my brain works better. It's so powerful when you begin to understand how you can really reverse the aging process using the power of food.

Dr. Chopra: Absolutely. Your biological age does not have to match your chronological age at all.

Dr. Hyman: No, and I think the book you've written, “Super Genes,” is such a powerful message because most of us believe that we're just stuck with the genes we have, that we inherit--

Dr. Chopra: Only 5% of disease related gene mutations are fully penetrant. The rest we influence through lifestyle.

Dr. Hyman: So that means only 5% are fixed. The rest we can change depending on what we do.

Dr. Chopra: Correct.

Dr. Hyman: And I've seen this happen over and over with my patients where we alter their diet, we improve their lifestyle, we get them dealing with their stress, and sleep, and their biology literally shifts. We've gone from seeing patients losing 100 pounds, getting off 15 medications, and it's unbelievable. I'm seeing how even within advanced healthcare institutions, there's a lack of awareness of food as a drug, as medicine, as a therapeutic agent. We know that if you eat better, you won't gain weight, and you might not have heart disease or diabetes, but beyond that, I think there's really no understanding of food as a powerful transducer of your biology that can actually shift you from sickness and disease to health.

Dr. Chopra: Right, and slow your metabolism, speed up your metabolism, it can be anti-inflammatory. Food is medicine, as they say.

Dr. Hyman: Yeah, and I love this concept of the super gene. It's not just your genes; it's your bugs' genes, and it's the epigenome which is actually altered by what you're eating. It's just a powerful concept, and it affects your thoughts, your feelings, your gene expression, and it's great. I think you've been such a leader in helping us to think about the mind-body effect, and now you're talking about the other direction which is how you affect your body by the things you're doing in your lifestyle. The body-mind effect, how do you work both ends of that?

Dr. Chopra: When I wrote “Quantum Healing” in 1988, we didn't have evidence around this, but now we have validation because we can measure stuff. We can measure metabolites, genomics, transcriptome analysis, RNA sequencing. All of this is relevant to us.

Dr. Hyman: So all of these concepts that are abstract that food is information or that food is medicine actually is being proven out.

Dr. Chopra: Yes, at a very fundamental level of cell biology and genetics.

Dr. Hyman: So what's the most exciting thing that you're involved with now, Deepak, that you want to share with everybody?

Dr. Chopra: The most exciting thing I'm involved in, something that you're involved in as well, is a new app called Jayo. If people want to find out about it, it's jayo.com. It curates experts, like yourself. We're actually hosting your detox plan through Jayo.

Dr. Hyman: Thank you.

Dr. Chopra: And we hope to actually create a well-being index that's very dynamic, so at the end of the day, you don't have to do anything. You can basically just keep your phone with you and a couple of trackers, but even if you don't do that, the phone will track everything including sleep, etc. It'll give you a biological index at the end of the day which is very dynamic and predictive of your well-being. I think this is the best contribution we can make to people's well-being. When you combine metrics with technology, and inspiration, and good teachers, and curated content, and you create a virtual community where everyone wants to collectively embark on the journey to well-being, then you can influence well-being, not only individually, but at the level of society.

Dr. Hyman: So you're building a community of people who all have the same goals and support and help each other.

Dr. Chopra: A global community.

Dr. Hyman: It's amazing.

Dr. Chopra: Saying, "I like Mark Hyman, I am like Mark Hyman."

Dr. Hyman: That's great. I love that. Thank you, Deepak. I encourage everyone to check out "Super Genes" and his new platform called Jayo. I'm honored to be a part of it. There are a lot of amazing teachers and healers on there.

Dr. Chopra: Thank you, sir.

Dr. Hyman: Thank you so much, Deepak. We'll talk again soon.

Dr. Chopra: Thank you. Goodbye.