



# THE FAT SUMMIT

*Separating Fat From Fiction*

**Transcript:**

**Interview with Dean Ornish**  
[ornish.com](http://ornish.com)

**Interview by Mark Hyman, MD**  
[drhyman.com](http://drhyman.com)

**Dr. Hyman:** Hey, everybody, this is Dr. Mark Hyman. Welcome to the Fat Summit, where we separate fat from fiction. And I'm here with my good friend, Dr. Dean Ornish, who actually is one of my mentors, my long-term inspirations. I first got actually into this field by listening to him speak, and it was 1996 at a conference in California, a very small group of people, and I was really inspired by your work on reversing heart disease way back then. And you've been an inspiration to me ever since you wrote the book "Reversing Heart Disease," and to millions of people.

And you've really been the father of lifestyle medicine. In fact, you won a Lifetime Achievement Award recently from the American College of Lifestyle Medicine, which is amazing. You won the Linus Pauling Award from the Institute for Functional Medicine.

And you've been for decades pioneering the power of lifestyle to transform people's health and reverse chronic disease, including heart disease, prostate cancer, even aging, with your work on telomeres with Elizabeth Blackburn, which has been amazing, showing it can actually reverse the very things that actually seem to cause aging using powerful lifestyle interventions that work faster, better, and cheaper than drugs.

And you've been tireless in your effort. I know you really well, we've been friends for a long time, and I've just seen how hard you work, to go around the world to push this vision that we can actually have an impact on these chronic diseases, which are driven by the choices we make every day.

We worked together on Obamacare. We were in Washington. You, and me, and Mike Royce, and we called ourselves The Three Musketeers. And it was so funny because we had no lobby group behind us. They were like, "Who are you with? Who are you representing? What company?" And we were like, "Well, nobody. Just the science, and the patients, and the truth."

And they didn't know what to do with us, but we tried to get this approval for lifestyle medicine to be reimbursed. And it didn't pass at the end, but thankfully your approach has been funded by Medicare after so many decades of you really talking about this and doing the research and hard work.

And I'm just grateful to you. I know so many people are grateful to you, Dean, for your work. And you really were the first guy to say "Hey, we can do this," and to show that it can be done. And it's really led the way for so much more that's come after you. So, thank you so much for your work, Dean, and being my friend.

**Dr. Ornish:** Well, thanks, Mark. I really appreciate that kind introduction. I admire what you've done in functional medicine, and maybe we should just stop now, and quit while we're ahead.

**Dr. Hyman:** Well, I think the beautiful thing about science is that it's constantly evolving. And we've had many conversations offline debating different studies, the research. And the problem with nutrition research is that it's hard to do, and the quality is variable, people get confused by studies that are population studies versus research trials, and looking at cause and effect.

And it creates a lot of confusion, and the average consumer is like, "I don't know what to do." One week it seems we should be doing one thing, another week, we should be doing something else," and people just want to throw up their hands.

And I think, we, I'd say agree on 90% of what's a healthy diet, which is whole unprocessed foods that are low in sugar or refined foods, that are full of phytonutrients, that are really good quality, whole, real food. And we should really be avoiding things that make us fat and sick, like the processed and refined foods.

And I think your book, "The Spectrum" which I read and took copious notes in, and I've written a blog about it and a video, if anybody wants to watch it, it certainly outlines this evolution of your thinking across the spectrum of what's possible to create health. And if you're really very sick, you've talked about how you need to be more aggressive. And if you're just wanting to maintain health and prevent disease, you can have a more wide spectrum, as you say, of choices.

So tell us, Dean, how did you first get into thinking about lifestyle as a way to reverse heart disease? Because at the time you came up with this idea, it was not even on the radar in medicine. How did this happen, and where did you get the insight?

**Dr. Ornish:** Well, I first began doing research in this area 38 years ago, in 1977, when I was a second year medical student at Baylor College of Medicine in Houston. But I actually got interested in it even back in 1971, when I was a freshman in college at Rice University in Houston, and got profoundly and suicidally depressed. And that was, for me, my doorway into a whole new way of looking at things. And the idea that suffering can be a catalyst for transformation has been a guiding principle for me throughout my life.

And as physicians, and any kind of healthcare professionals, we have the privilege of working with people, often when they're in pain. And change is hard,

but if you're hurting enough, suddenly the idea of change becomes more appealing. It's like, "Well, that may be hard or weird, but boy, I'm hurting so badly, let me try this weird stuff."

And so it's a long story, and I wrote about this in a couple of my earlier books, but, there's an old saying that "When the student is ready, the teacher appears," and that was certainly true for me. And I was home in Dallas, recuperating from a really horrible case of infectious mononucleosis because I'd run myself down so much.

My plan was to get well enough to kill myself, and strong enough to do it. And meanwhile, my older sister had been studying with an ecumenical spiritual teacher named Swami Satchidananda, and so my parents decided to have a cocktail party for him. This was back in 1971 in Dallas, which was pretty weird, even weird today, but especially back then.

**Dr. Hyman:** This was in '71, you said?

**Dr. Ornish:** 1971. I was 18 years old. And in walks with this guy wearing this long saffron robes, looking like Central Casting's idea of a swami, long white beard, and he went, he began giving asana lecture in our living room and he started off by saying, "Nothing can bring you lasting happiness," which was part of the reason I was so depressed. And everyone else had said, "Oh, just get rich and famous, and all the things our culture teaches us, and then you'll be happy," and I knew that wasn't true.

But he's glowing, and I'm about ready to do myself in, I thought, "What am I missing here?" And he went on to say, "Nothing can bring you lasting happiness, but it's our nature to be happy, and peaceful, and healthy. And not being mindful of that, we often run after all these things. We think, if only I had more money, or power, or beauty, or accomplishment, or whatever the particular arena is, then I'll be happy, then I'll feel good, then people will love me, then I won't feel so horrible."

And once you set up that view of the world, however it turns out, you're likely to feel stressed and unhappy. Because until you get it, you're stressed. If someone else gets it and you don't, then it makes you feel like you live in this dog-eat-dog, zero-sum game competitive world, the more you get, the less there is for me, and so on.

If you don't get it, you feel stressed. And even if you get it, it's great for a little while, and that's what makes it so seductive. Like, "Ah, I got it, it's mine." And then it's soon followed by, "Now what?" It's never enough. Or "So what? Big

deal." It doesn't really provide that lasting sense of meaning. So we'd often say, "Well, that didn't do it, but maybe this will," and the cycle continues.

And so he said, "If you just change your diet, and exercise, and do meditation, and yoga, and so on, that won't bring you a sense of peace, but what it will do is help you quiet down your mind and body enough to experience what's already there. And that may sound like semantics, but it's really all the difference in the world, that if I feel like I have to get my happiness and my health from outside me, then everyone has control over that.

If I'm saying that it's my nature to be happy and healthy, then the question changes to, "What am I doing that's disturbing my own innate health and well-being?". This is very not to blame, but to empower. And it may sound like a New Age cliché, but it really turned...

**Dr. Hyman:** It's true.

**Dr. Ornish:** I can always kill myself and make that...

**Dr. Hyman:** You can always kill yourself later if it doesn't work out, right?

**Dr. Ornish:** And this is where we like to make puns. Years later people said, "What are you, a Hindu?" And he'd said, "No, I'm an Undo."

**Dr. Hyman:** I love that one.

**Dr. Ornish:** The ideas that all these spiritual practices don't bring you a sense of peace. It's not like Valium in another form, but rather, they help us quiet down...

**Dr. Hyman:** How'd that lead to, how did that lead to doing the research on reversing heart disease?

**Dr. Ornish:** Well, what they do is they help us quiet down our mind and body enough to experience what's already there. And so later, when I was in medical school, and I was on Michael DeBakey's surgical service, an eminent, pioneering heart surgeon. We cut people open, we bypassed their clogged arteries, we'd tell them they were cured. And more often than not they'd go home and do all the things that had led to the problem in the first place – smoke cigarettes, eat junk food, not manage stress, not exercise. More often than not, their bypass...

**Dr. Hyman:** It's good for repeat business, right?

**Dr. Ornish:** Good for repeat business, and so we'd have to cut them open again, sometimes multiple times. So for me, bypass surgery became a metaphor. We were literally bypassing the problem. And so the guiding principle, which the swami really taught me back in 1971, many, many years ago, was to ask "What is the cause?" And there's usually a causal chain of events that leads to something. And the farther back in that chain of events we can go, the more powerful the healing can be.

And so I wondered what would happen if we treated the cause? Which as I immersed myself in the medical literature, it looked pretty clear that the underlying causes were the lifestyle choices that we make: how we eat, how we respond to stress, you know, eat well, move more, stress less, and love more.

And one of the nice things about being a medical student is you'll try things you wouldn't try if you "knew more." So I took a year off between my second and third years of medical school, began the first of what amounted to a series of studies, ultimately showing, for the first time, that you could actually not only prevent, but actually reverse the progression of heart disease...

**Dr. Hyman:** Well, that was a big insight, right? Up until that point, people knew lifestyle issues and choices could cause heart disease, but no one had really thought that you could actually reverse those changes that took decades, in a matter of weeks or months.

**Dr. Ornish:** That's right. And these underlying biological mechanisms are so much more dynamic than when he had once realized. That when you change your lifestyle, particularly if you make healthy changes, most people find that they feel so much better so quickly. We found that angina went away in over 90% of people in just the first 3 or 4 weeks.

And so that really reframes the reason for making these changes from fear, that something bad might happen years down the road, which is not sustainable, to joy of living now. That what you gain is so much more than what you give up, and how quickly those benefits can occur.

**Dr. Hyman:** Yeah, that's so true. So how did you come up with the concepts of the diet and the interventions that you did back then?

**Dr. Ornish:** Well, it's basically a whole foods, plant-based diet – fruits, vegetables, whole-grains, legumes, soy products – in their natural, unrefined forms. These are foods that are naturally low in fat. I somehow got...because I ended up debating Dr. Atkins before he died, many times. He was the low-carb guy,

so that pegged me as the low-fat guy. And it's unfortunate because low-fat is really such a small part of the overall diet, it's a small part of the overall lifestyle recommendations that we make.

Now it's not just what you exclude from your diet that's harmful, it's also what you include that's beneficial. And as you know, there are literally hundreds of thousands of protective substances in fruits and vegetables in particular, that have anti-cancer, anti-heart disease, and even anti-aging properties.

**Dr. Hyman:** Right. Because bread and Coca-Cola is a low-fat diet, that's not going to help you be healthy. And I think that's what you just said, which is so important, and people need to know, is that it's not what you take out, it's what you add in that's so important. That those are the powerful, healing phytonutrients, fiber, antioxidants, minerals, vitamins, all those things that help your body function better is what you're adding in. So that's a huge part of it.

**Dr. Ornish:** So I'd really love to get out of this low-fat vs. low-carb debate, which I think is really just a very small, and not even the most important part of the issue. It's really good carbs, good fats, good proteins, which essentially are plant-based proteins, you want to eat fruits and vegetables, which are good carbs, avoid the bad carbs, refined carbs, concentrates, sweeteners, and so on.

You want to have the good proteins, plant-based proteins. And you want to have good fats, some omega-3 fatty acids; you don't really need that much of them. I still think one of the differences that we probably have is that fat is very dense in calories. And so I think not only avoiding the bad fats – the trans fats, hydrogenated fats – I do think there's a lot of evidence that saturated fats really are not good for you. But including more of the good fats, I think we can agree on things like omega-3 fatty acids, which have...

**Dr. Hyman:** What about things like nuts and seeds in their whole form?

**Dr. Ornish:** My program is science-based, and so I guess in 1982, however long ago that was, let's see, that would make it almost 25, 30 years ago.

**Dr. Hyman:** 30, 35 years ago.

**Dr. Ornish:** 33 years ago. But who's counting? My mentor when I was at Harvard Medical School in Mass. General was Dr. Alexander Leaf. He'd done a lot of the pioneering work on fish oil and omega-3 fatty acids. And so back in 1983, I changed my recommendations and included that.

In fact, I remember a phone call that we had with all the dietitians that I was working with, and I said, "We're going to add fish oil, or flaxseed oil, or plankton-based omega-3s, depending on if you're vegan or not. And they said "Oh you can't add oil on the Ornish Diet." I said, "Who are you talking to?" Because that's how it started.

And so this year, because I think the research on seeds and nuts is so compelling, we've added that as well in small quantities. Not so much because it's high in fat, but because I think that when you're dealing, even just on an energetic level with the germination, with the things that are really designed, whether it's sprouts or seeds or nuts, these are really...I have an oak tree in my backyard where I grew up, and we planted an acorn when I was a kid, it's a mighty oak tree now. There's a lot of energy in the seeds.

**Dr. Hyman:** Right. When you think what's in the seed or nut, it's actually all of the things that are needed to create a new life, that's what's in there...

**Dr. Ornish:** Exactly. So I think it gets away from...yes, they're higher in fat, but I think in moderation that can be good as well.

**Dr. Hyman:** Yeah. So there's a whole spectrum of people, right? There's Dr. Esselstyn who's like, "Don't even look at a nut." And then you've written this book "The Spectrum" which talks about the spectrum of choices, including things like avocados or nuts or seeds or other things in your diet that include healthy fats, and it's part of the spectrum of choices that people have.

**Dr. Ornish:** Well "The Spectrum" was written based on a scientific finding that we found in all of our studies over almost 40 years, which was that the more people changed their diet and lifestyle, the more they improved, at any age. I had thought that the younger people with less severe disease would do better, but I was wrong.

It wasn't how old or how sick they were, it was primarily a function of how much they changed their lifestyle. The more they changed, the more they improved in how they felt, which got them into a virtuous cycle because if you start to feel better, you want to keep doing those things that make you feel good.

The more they changed, the more they improved in every metric we looked at, whether it was the percent diameter stenosis, how much blockage there was in their arteries, the length of their telomeres, the changes in their prostate cancer. In every metric we looked at, the more they changed, the more they improved.



But it's worth mentioning that we came up a priori, beforehand with this formula, to try to measure adherence so we could correlate it with these outcomes. And it was pretty primitive, but from the diet, we mainly looked at milligrams of cholesterol and grams of fat. And so that's part of why I really have found that the amount of total fat, I think, does make a difference. And saturated fat, I know we have a difference of opinion about that. Now...

**Dr. Hyman:** So how do you reconcile...the new U.S. Dietary Guidelines Advisory Committee has lifted its recommendations to limit total fat, and have eliminated the cholesterol restrictions as well. They still recommend limiting saturated fat. So how do you interpret all that? Because when you've got this group of scientists who are considered the world's experts, why would they say this, what are they looking at, what is the research that they're basing it on, and why do you think they're wrong?

**Dr. Ornish:** Well, it's a longer story than we probably have time for here, but we all met last week as part of the Finding Common Ground Conference that Oldways sponsored, and so we all got to talk to each other. And one of the things that came out, I think, with the dietary cholesterol is that most of those studies were based on Egg Board studies that were funded primarily, almost exclusively by the Egg Board over the last 20 years. If you go back to...

**Dr. Hyman:** That's like the egg lobby group, basically.

**Dr. Ornish:** They are the egg lobby group. And I think part of the issue is that if you're already eating a lot of fat and cholesterol, like most Americans are, you're already saturating your cholesterol receptors. So if you add another egg or two or three, it's hard to really see the difference on your plasma LDL level.

But there's more and more evidence coming out that there are other mechanisms that affect our health besides just simply LDL or the usual risk factors. Like, for example, egg yolks are high in not only cholesterol, but they're high in TMAO, which Stan Hazen at the Cleveland Clinic found significantly increases the risk of not only heart disease, but the most common forms of cancer. There's a lot of studies coming out looking at postprandial levels of cholesterol, not just...

**Dr. Hyman:** Like after you eat you mean, what happens when you eat.

**Dr. Ornish:** That's what happens after you eat, exactly. And again, with total fat, I think that...fat has nine calories per gram, protein and carbs have four. So I think that there's advantages to, again, not just carbs versus fat, but I think an

optimal diet is low both in refined carbs and sugar and white flour, white rice and so on, and in total fat.

We've found in our randomized trials, there was an average 24-pound weight loss in the first year, and they kept half that weight off 5 years later. There was a metabolic ward study that came out a few months ago that the NIH funded, that found that calorie-for-calorie, reducing dietary fat had 67% more effect on body weight than reducing carbs.

But again I think that's the wrong question. It's not one versus the other. But I do think it counters the people who say, "Low fat is dead, it's all carbs, it's all sugar." And I think that reductionistic approach is not helpful.

And finally, there's more evidence coming out that animal protein itself is harmful, independent of the whole fat versus carbs. There was an article in Cell Metabolism last year showing that people who eat a lot of animal protein have a 75% higher risk of premature death from all causes, and a 400% to 500% increased risk of premature death from heart disease and the most common forms of cancer. So, an optimal diet is going to take all of those factors into account.

**Dr. Hyman:** It's true. It's hard...as I look at the literature and read it all, I saw those studies, I read them. And I've also read many, many other studies that say the opposite things that are done by really prominent scientists. So it makes it confusing for me, not a researcher, although now I am a researcher at Cleveland Clinic, I just started to do clinical research, but I'm more a practicing doctor, and I want to know what do I tell my patients? I want to know what do I eat, myself? So...

**Dr. Ornish:** See here's the thing, I think the confusion comes when someone says, "Okay, let's add more fat to a diet, but we're going to replace refined carbs," and so people do better. Well, that's good. But even better would be to replace the refined carbs with good carbs fruits and vegetables rather than fat. And so you're going to get some benefit by replacing...

**Dr. Hyman:** But we don't know, we don't know that. We were just talking earlier about this study that was just published in 2015 by Dr. Walter Willett and David Ludwig where they looked at 53 randomized controlled trials for a year or more, they were long-term studies, looking at low-fat, versus a higher-fat, low-carb diet. And they found that in those 53 studies, that there was dramatic improvement in weight using the higher-fat diets. So that contradicts...

**Dr. Ornish:** That's a perfect example of what we're talking about. Because first of all, they were replacing refined carbs with fat. Okay? So getting rid of the refined carbs is going to be good. But they weren't low-fat diets. A lot of these studies that look at low-fat diets, A, aren't very low in fat, they go...the Mediterranean Diet study went from 39% to 37% fat, most low-fat studies were "30% fat," not very low in fat, and they replace fat with sugar or refined carbs, not a good idea. And so part of the...

**Dr. Hyman:** Maybe, I don't know if that was true in all the studies.

**Dr. Ornish:** Part of the confusion comes because people are looking for this reductionistic one thing. To me, yes, you get some benefit by replacing refined carbs with fat, you get even more benefit if you replace refined carbs with fruits and vegetables and whole grains.

And I think the burden of proof really, and this is really a key point that I want to keep coming back to, is that we need to get beyond things like risk factors, like weight, blood pressure, cholesterol, and say, "What's happening to the actual disease process itself?"

And in our randomized trials, we found that this diet in combination with simple changes in lifestyle, walk a half an hour a day, do some yoga or meditation, or have more love and support in your life, could actually reverse the progression of heart disease. There was some reversal after a month, even more after a year, even more after 5 years, in direct proportion to the degree of adherence.

And with all this talk about personalized medicine, we found the same lifestyle, diet and lifestyle changes that can reverse heart disease could reverse type 2 diabetes, could reverse early-stage prostate cancer, could change over 500 genes in 3 months, could, as you mentioned earlier, lengthen telomeres thereby reversing aging at a cellular level. And in every one of those studies, the more people adhere to this diet and lifestyle program, the more they improve.

And Steven Smith did an article or review article in the New England Journal of Medicine a few years ago, and he looked at what happened to arteries on different diets, on a diet like I'd recommend, a whole-foods plant-based diet...

**Dr. Hyman:** This was in mice?

**Dr. Ornish:** This was in mice, but we're finding our studies in humans, and also in a high-protein low-carb Atkins-type diet. And they found that the weight changes and even the cholesterol changes weren't that different. But if you actually looked at what happens in the arteries, they're like night and day.

On the diet like I'd recommend, the arteries are clean, on the standard diet, partially clogged, on an Atkins-type diet, severely clogged. And they were mediated through what they call non-traditional risk factors, things that most people haven't heard of, [inaudible] growth factors, and non-esterified fatty acids, and so on.

And so I think the burden of proof...the only diet and lifestyle intervention that's actually been proven to reverse heart disease in a randomized controlled trial is the one that we're talking about. Esselstyn, we don't agree on a lot of things, but his diet is essentially a whole foods, plant-based diet as well. He's shown at least anecdotally, you can get reversal. I'm not aware of a single study showing that an Atkins-type, high-fat, high animal protein diet can reverse heart disease. And the studies that have done using surrogates, like flow media invasive, you know, blood flow, show that they actually get worse.

**Dr. Hyman:** I think you're right, Dean. I think you're absolutely right, and I think that's a really important point, that we need to do the right kind of research to actually show, one way or the other, what's the definitive conclusion. Because you're right, you have shown this, without a doubt.

The question is, what happens if you take someone and put them on a high-quality plant-based diet that's low in fat and low in refined sugars and carbs, as well as a very high-quality, mostly plant-based diet, but with more plant fats, like avocados, coconut oil, nuts and seeds, olive oil, and very low in refined sugars and carbs to ensure that what are the best of those two kind of diets, comparing them head-to-head, and looking at all the metrics that have to do with heart disease function and reversal.

And I've actually talked to Steve Nissen at Cleveland Clinic about actually doing such a study, and it's going to cost like \$100 million. Like yeah, but we should do it because we need to answer this question. I think you're absolutely right because I don't think we know the answer right now. You've been the only one to really show this, but no one's done the other side of the study and I actually don't even know why.

**Dr. Ornish:** Yeah. Well I've also talked with Steve at the Cleveland Clinic about doing a study like that. That would be lovely. When Gary Taubes was trying to raise all this money to do nutrition research, I said "Why don't we actually do a study measuring actual endpoints like this?" And he ultimately wasn't interested in doing that.

**Dr. Hyman:** Well, they were trying to answer the calorie question first, I think.

**Dr. Ornish:** But here's the thing, it may very well be true that adding avocados and oils and so on, that we can still show reversal. And if that's the case, I'll be the first to embrace those. It'll certainly make it that much easier to eat that way. But I guess the difference is that my belief is that the burden of proof is on us to do these studies before we make these recommendations.

And maybe I'm being overly conservative by saying that the diet is perhaps lower in fat than it needs to be, but at least I know that it works. And for people who have heart disease, then I can stand on that. I wouldn't feel comfortable saying, as many people do, that thing, because I don't think we know that yet.

Now, "The Spectrum" was based on the idea that if you don't have heart disease or a life-threatening condition, it's not all or nothing. The more you change, the more you improve, and what matters most is your overall way of eating and living. I'm very comfortable saying that somebody can start by making moderate changes. If that's enough to accomplish those goals, great. If not, they can do more. If they indulge themselves one day, it doesn't mean they cheated or they're bad. Eat healthier the next. You don't have time to exercise one day? Do a little more the next, and so on.

But I think when you're dealing with people who have a life-threatening condition, we to really be on pretty firm ground that what we're recommending works. Now, could we get the same outcomes with less intensive interventions? I sure hope so. But until we have those data, I think the burden of proof is to be more conservative in what we're recommending to those things that have been proven to work in randomized trials, which is what we do.

**Dr. Hyman:** Can I actually...one thing that just struck me was when I had a conversation with Dr. Ron Krauss, who I'm sure you know is one of the leading lipid researchers and cholesterol researchers. He came up with a concept of particle size, what are the size of your cholesterol particles, how does it affect your risk, and how is that related to your diet?

And he said, in the '80s, they did a study, because he was part of the American Heart Association, looking at low-fat diets, which are high in carbs, but they tried to create healthy carbs, it wasn't like all processed food, and they tried to create a healthy diet, and they did healthy volunteers who had normal cholesterol, as well as people who were sick.

And they found that, they were sure they were going to see improvements in the lipid profile using the low-fat diet, and what they found was the opposite. They

actually turned people who were healthy into people who were having metabolic syndrome, or pre-diabetes, by giving them a low-fat, higher carb diet, even though it was healthy carbs. How do you reconcile that?

**Dr. Ornish:** Well, the recognized control group of our cardiac studies was on an American Heart Association Step II diet, and they showed worsening after one year, and even worsening after five years. I'm not a big fan of the American Heart diet. That doesn't surprise me.

**Dr. Hyman:** No, no, it wasn't that. They weren't using the American Heart Association diet, they were using a lower-fat diet...

**Dr. Ornish:** No, it was...I know that study. It was a 30% fat diet, and they were replacing fat with refined carbs. We actually looked at particle size in our program. We found that they went from pattern A to pattern...they went from the small, dense LDL, which are atherogenic, which cause heart disease, to the larger particle size. And so, you know...

**Dr. Hyman:** I read the data on that study you did, and it was very interesting. And I saw that the triglycerides went up, and the HDL went down. Even though the LDL went down, the triglycerides went up and the HDL went down on the patients who did your intervention.

**Dr. Ornish:** No, they initially went up, the triglycerides, and then they came down actually lower than they were at baseline. HDL does tend to go down a little. And I think that's, again, why we need to move past traditional risk factors. There's this idea that people get in this very reductionistic, simple-minded way of looking at things, that anything that raises HDL is good and anything that lowers it is bad.

But your body makes HDL as part of a process, as you know, called reverse cholesterol transport. It's like the garbage men of your body. So if you're eating a lot of fat and cholesterol, then your body can't make as much HDL to get rid of it, eating a lot of garbage and can't make as many garbage men, you're at higher risk of heart disease.

**Dr. Hyman:** But the triglycerides...

**Dr. Ornish:** Let me finish, you asked me HDL, let me finish talking about that. But if you reduce your intake of garbage – the fat, and cholesterol, and animal proteins and so on – teleologically it's almost like your body says, "Hey, not as much garbage, don't need as many garbage men."

But HDL is not a disease, HDL is a risk factor, and we found when we actually measure the disease, using arteriography, PET scans, thallium scans, echocardiography, cardiac events, in every way, these people got better.

On the other hand, Pfizer spent \$2 billion to develop a drug called Torcetrapib that raises HDL. They actually have done two or three drugs like this, and in every case...

**Dr. Hyman:** They kill people.

**Dr. Ornish:** They kill people, right. So, not everything that lowers it is bad, and not everything that raises it is good.

**Dr. Hyman:** Right. It's more complex.

**Dr. Ornish:** And triglycerides initially went up, and then over a longer period of time, over the course of a year, they went down, and they remained lower after a year and they remained lower after 5 years. And I think that's because early on, we weren't as mindful about the importance of reducing refined carbs as we later became. So, we adjusted that accordingly.

**Dr. Hyman:** One of the most amazing parts of your work, which I don't think gets enough attention, and I think is actually probably, may turn out to be one of the bigger phenomena in terms of success of your program is what's now being called social genomics, or socio-genomics. We now know they're measuring that your interactions with other humans, if there's love involved, connection, community, actually turns on genes that create health. And if you have bad interactions, it does the opposite, which is kind of scary.

And you had this concept of not just getting people to change their diet, or exercise, or stop smoking, but you actually had them do it together. And I've heard so many stories about your groups, and I know you used to run programs out in California, I actually was about to go teach in one of them back in '96, but I had a family emergency and I couldn't go, and I regret to this day that I didn't get to be part of that. And I know that people had transformational experiences on a heart level and an emotional level, and that power of the group really is so amazing.

And you know, I worked with Rick Warren who created this program called *The Daniel Plan*, which used that insight that you had, which was, "How do we use the power of each other to create health?" And how did you come to that, and what role do you think that plays, and what is your thinking involved around that whole concept?

**Dr. Ornish:** Well, I read a book about this back in 1998 called "Love and Survival" that reviewed what were then hundreds, and now thousands of studies – that was 17 years ago – that people who are lonely and depressed are 3 to 10 times more likely to get sick and die prematurely from all causes, than those who have a sense of love, and connection, and community. In part because you're more likely to abuse yourself, and in part through mechanisms we don't fully understand yet.

So in doing these studies, I had a chance to spend a lot of time with the same group of people over, sometimes, years. And I'd ask them, like, "Why do you smoke, or overeat, or drink too much, or work too hard, or abuse substances? These behaviors seem so maladaptive."

And they'd say "You don't get it, Dean, these behaviors are very adaptive because they help us get through the day, they help us deal with our loneliness and our depression. And the 2 number one categories of prescription drugs the last 20 years are statins and antidepressants. A lot of lonely, depressed people out there.

And so, telling somebody who's lonely and depressed that they're going to live longer if they just change their diet or whatever doesn't work. I mean if you told me back when I was suicidally depressed when I was in college that I'd live longer if I just did certain things, I'd say, "You don't get it."

**Dr. Hyman:** Eat more broccoli, you're going to live longer.

**Dr. Ornish:** I don't know if I want to live longer. And what I'm learning is that if something's meaningful, then it's sustainable. And so, the reason we're getting 85% to 90% adherence to our lifestyle program, we're training hospitals and clinics around the country now that Medicare and other insurance coverage are covering our program, most doctors think, "Oh, I can get my patient to take their statins, but there's no way they're going to change their lifestyle."

**Dr. Hyman:** And most people don't, by the way, take their statins. Half the people...

**Dr. Ornish:** Well, that's the point, half to two-thirds of people who are prescribed statins aren't taking them after just a year, after usually 6 months, and yet we're getting 85% to 90% adherence to a lifestyle program. And the reason is, is that the statins are fear-based. It's like, "Take this pill, it's not going to make you feel better, hopefully it won't make you feel worse..."



**Dr. Hyman:** Often, it does.

**Dr. Ornish:** "...or something awful like a heart attack or stroke from happening years down the road." But because these underlying biological mechanisms are so dynamic, if you make big enough changes in your lifestyle, most people find that they feel so much better so quickly, it reframes the reason for making those changes from fear of dying to joy of living, and ultimately...

You know our program is a love-based, joy-based, pleasure-based program. The irony is people say, "Oh, Dean Ornish, low-fat, it's austere, it's ascetic, you know I'm not going to live longer, it's just going to seem longer," and it's like, that is so not me.

**Dr. Hyman:** Right, I know you, that's not you. You're definitely a pleasure-man.

**Dr. Ornish:** These are the things that really bring the most pleasure in our lives, is feeling good, you know? And so what we use the groups for, what people think is going to be the hardest, is to create a safe environment, where people can let down their emotional walls and defenses, and just be authentically themselves.

And people used to criticize my work and say, "Oh that sounds so touchy-feely," and I'd get defensive, and I'd say, "No look at our angiograms and our PET-scans and so on," and then one day I said, "It is touchy-feely. That's what makes it work. We are touchy-feely creatures, we're creatures of community, it's a conspiracy of love, if you will." That's what makes it so successful.

**Dr. Hyman:** Yeah, I call it "the love diet, the love diet." I mean it's so true, and I think, we think of the group way as a delivery mechanism for health information, or content, but actually its part of the medicine.

**Dr. Ornish:** It's a big part of it, and it's very hard to get people to make lifestyle choices that are life-enhancing if they don't feel like that they're going to really know what they gain is so much more than what they give up. And that's ultimately why we're able to do that.

**Dr. Hyman:** Well, science has really backed you up. We look at the science and behavior change, people are less likely to change on their own, but they're more likely to change in a community. Chris Tucker in his work that you're more likely to be overweight if your friends are overweight, and if your parents are overweight the converse is true, you want to find the healthiest person you

can, and hang out with them as much as you can. And that will actually make you healthier.

**Dr. Ornish:** Well, Chris Tucker has found that if your friends are obese, you're 45% more likely to be obese. If it's your friend's friend it's 25%, and if it's your friend's friend's friend, it's 10% more likely.

**Dr. Hyman:** You don't even have to know them.

**Dr. Ornish:** That's right. And it's not just obesity, it's pretty much everything. So these social networks are really powerful. The real epidemic isn't just obesity or heart disease, it's loneliness and depression. And so, what we try to help people do is, when they come to us because they're hurting, is to create a safe environment as part of our program that encourages them to really just connect with other people.

We used to have that 50 years ago. We'd have an extended family, or a neighborhood with two or three generations of people, or a church or synagogue, or whatever. And many people don't have any of those things. And so we're realizing now that those things really matter, and that they matter a lot more than we thought.

**Dr. Hyman:** That's great, I love that part of your work. And it's really, I think, one of the things that's underappreciated, and it's probably just as powerful as the food. So, let me ask you a different question, which is a bigger, broader question.

You've been involved in this field of lifestyle medicine for 30-plus years. And you've inspired millions to think about this in a different way. And we're seeing some shifts happening, right? We're seeing McDonald's closing. We're seeing peoples' consumption of soda decreasing. We're seeing the awareness about food and food movement coming around.

And yet, our food policies are still so antiquated. They're driven by food industry interest, our food labeling is confusing. We market junk foods to kids. We don't have any regulation of the food industry in a way that actually promotes health. So, how do you, after being in this field for so long, see that we can best, as a community, as a society, what can everybody who's watching do to actually shift the tides, so that we actually create a healthy environment?

Because, if people are even wanting to do your program or any program, and they're actually in a toxic environment it's very hard to do. So how do we best shift that? You know I've worked in Washington, but there's so much more.

And I really would love your insight because this is what you spent your whole life thinking about.

**Dr. Ornish:** Well, I appreciate the question. I've tried different approaches. I've tried working with big food companies, I was able to get McDonald's to put salads on the menu, and take the trans fats out of their French fries, and lower their sodium content, and so on. But the problem is, that because of the perverse food incentives, and the Farm Bill, for example, where the toxic foods are subsidized economically, the salad was \$5.95, the burger's 99 cents, so if you're on a fixed income you get more calories for your buck by eating junk food, because it doesn't really buy us into it. The real cost to society.

**Dr. Hyman:** What's the real cost of cheap food, right?

**Dr. Ornish:** Yeah, so I don't know that I'm all in favor of using taxation to do that. But on the other hand, I think we should get rid of the subsidies that make it cheaper for people to eat junk food. I think that's crazy.

**Dr. Hyman:** You are in favor or not in favor of taxation?

**Dr. Ornish:** I'm really more of a free market kind of person. Even though I'm socially liberal, I'm more economically conservative. And I think that what we're seeing now, as you indicated, that soft drink sales are down, and McDonald's are down, not because of regulation and not because of taxation, but because people are getting smart.

And awareness is to me, is always the first step in healing. And so the kind of work that we're all trying to do to educate people, I think, is finally making a difference. And so that encourages me and the biggest growth sector in the food industry are the healthier foods, the organic foods, the...

**Dr. Hyman:** But it's like a drop in the bucket. You've got like a \$100 billion revenue from Pepsi, from global sales. And yet, you've got just a fraction of that being in the healthy food market. I mean, it's happening, but...

**Dr. Ornish:** It's true. It's happening a lot more slowly than I would like, but soft drink sales are down 25% in the last 5, 10 years, that's a really good thing. So I find that encouraging.

**Dr. Hyman:** So you think just encouraging people to make better choices, and not using regulation or legislation, or...

**Dr. Ornish:** I think we should definitely use legislation or regulation to give people healthier choices. The fact that Medicare's now covering our program made all the difference. Before, through my non-profit institute we trained 53 hospitals and clinics around the country. We got clinical outcomes, better adherence, larger cost savings, and a number of the sites closed down because we didn't have the reimbursement.

Now we do. So now that it's reimbursable, that makes it sustainable for the people who most need it. So those kinds of things are good. And I think we need to get rid of these incentives, to make it, for these healthier foods. But I think what we also need to do is to give people more of a unified message about what constitutes a healthy way of eating.

That's why we all met together last week in this Oldways conference. And one of the concerns that I have is that one of the things that's been repeated so often that it's almost become a meme, is that Americans have been told to eat less fat, they're fatter than ever, low-fat is dead, so eat as much fat as you want.

And again, it's that kind of reductionistic thinking that is so harmful. I went to the U.S. Department of Agriculture database, which actually tracks the entire food supply, not just people that say they eat, but what they actually are eating. And what I learned is that every decade since 1950, Americans have been eating more fat, more sugar, more meat, and they're exercising less.

**Dr. Hyman:** More of everything.

**Dr. Ornish:** So, not surprising we're fatter, not because we're eating too little fat, but because we're eating too much of everything. That's the message we should be conveying to people, is that it's not sugar and not fat, it's not fat and not sugar, it's all of these things. It's not this but not that. An optimal diet is low in fat, and low in sugar, and low in animal protein, particularly red meat.

The World Health Organization came out a few weeks ago, and meta-analysis showing that, I wrote an op-ed, excuse me, an editorial response to a Walter Willis article that reviewed over 100,000 men and women, and the nurses and physicians health studies, showing that basically red meat consumption increases your risk of premature death from pretty much everything. And the studies on saturated fat, I know we have a difference of opinion on, there was an article just in the British Medical Journal by D'Souza a couple of months ago, and the headline was, and even the abstract of the article was "Trans Fats Are Bad for You, Saturated Fats Are Not." So I went into the article and I read it, and I was shocked to find that they had two basic ways of looking at the data.

**Dr. Hyman:** Headlines often don't match what's in the studies, very often in...

**Dr. Ornish:** But even the abstract didn't say this. What they actually found was that, if you looked, they had two ways of looking at the data. One was unadjusted, the raw data, which I think are the most accurate. The other was the "adjusted" data which often introduce biases, because if you adjust for cholesterol, you're adjusting for meat intake, and so on. They only reported the adjusted data.

When they looked at the unadjusted data, the raw data, what they found was that saturated fat consumption was statistically significantly correlated with total mortality, cardiovascular mortality, heart attacks, diabetes, pretty much everything they looked at, and that didn't even make it into the abstract. So for some reason, there's this idea, and part of the problem is that when you're...Journals are worried about their impact factor, media are worried about, now that with the Internet, so many magazines are shutting down.

**Dr. Hyman:** ...controversial headlines.

**Dr. Ornish:** If Time magazine can put butter on the cover, that's going to generate a lot of sales. Telling people what they want to hear is always a good way to generate sales, but I think we need to be more responsible about what the data really show.

**Dr. Hyman:** It's tough though, Dean. You mentioned that study from The Nurse's Health Study and the Physician's Health Study, and these large populations they looked at through epidemiology, and when you look at the characteristics of the meat-eaters, they ate 800 more calories, they ate more sugar, more processed food, more soda, smoked more, drank more, ate less fruits and vegetables, of course they're going to have more heart disease.

So was it the meat, or was it something else? And that's the problem with these large, epidemiological studies, you can't actually prove cause and effect one way or the other. They might show a correlation, but I mean, every day I wake up and the sun rises. It has nothing to do with the fact that I woke up in the morning, but it's 100% correlation. And people just conflate these two things and it's challenging.

**Dr. Ornish:** I understand that correlation is not causation, believe me, that's why I do randomized trials. But again, I come back to what we said earlier. I think we have shown that, at least taken as a whole, these simple lifestyle

changes can actually reverse pretty much everything we looked at to the degree that they do it.

And even the most esoteric, and we looked at, we're about to publish a paper on it, angiogenesis, finding that that's improved with people who make these changes. It's almost like if you give a body the right raw ingredients, it can almost extract or personalize what it needs in order to heal.

**Dr. Hyman:** Well that's what's so brilliant about your work, right? Because you're not its, one died for cancer, one died for heart disease, one died for aging, one died for this or that or the other thing," it's like "What's a healthy human diet?" It's mostly a plant-based, whole-foods, unprocessed diet, combined with doing a little bit of exercise, love and connection, not smoking, and doing some relaxation, meditation, yoga, something like that. And it's such a simple prescription, and I've seen this in my own practice, following your guidelines with my patients for decades, and adapting them over the years.

You're right. The changes that happen quickly are so profound, and so dramatic, and work so much faster and better than any drugs. That's what's interesting, you see these drugs...this research on statins, and it's like, "Well, there's a 30% reduction in your risk of death." Well yeah, that means your risk goes from 3% to 2%, so 1% absolute risk reduction, which sounds impressive when you say it's 30%. But actually when you look at what we're talking about, it's magnitude, or is a magnitude greater than that, and it's pretty dramatic.

**Dr. Ornish:** Well, I agree with you that we agree on so many things. The only other thing that, I guess, you and I disagree on is, again I would rather err on the side of being cautious. And so, it may very well be that grass-fed beef, for example, is healthier than corn-fed beef. I'm certainly inclined to believe that.

But healthier doesn't mean healthy, and I'm not aware of a single study except maybe that they're a little bit higher in omega-3s, and there's certainly better ways of getting omega-3s than through meat, that grass-fed beef is good for you. All the data that I'm aware of show that, yes it's confounded, yes it's hard to do, but if you look at preponderance of evidence, red meat is really not a good thing to be eating. So...

**Dr. Hyman:** I saw a fascinating study, I don't know if you've seen this study, where they looked at people who shopped at health food stores, who ate meat and were vegetarian, so people who were like...

**Dr. Ornish:** Wait, ate meat and were vegetarian?

**Dr. Hyman:** No, so it was like 11 thousand people, they looked at...half of them were meat-eaters, but they ate healthy, mostly plant-based diets with a little bit of meat, and then the other ones were vegetarians. And then they looked at their health outcomes over years. And they found that in the context of an overall healthy diet, the meat may not be such a problem. They actually had no difference in health outcomes. Which I thought was fascinating.

It was only one study, but even though, it's interesting, I've seen other interventional studies and I've seen in my own patients, people who have really on the diabetic spectrum...actually do better with more good-quality protein and more fat, than, actually, people who are not on that spectrum.

And I think that's what we're learning about, there's like a whole level of differences in genetics that make people respond differently to different diets. Like the Pima Indians, they would look at a bagel and they would become diabetic, whereas I can eat one because I'm Jewish, and I don't become diabetic.

**Dr. Ornish:** Yeah, but here's the thing, Mark, is that if you're eating a diet, if you're replacing...again, goes back to what we were saying earlier, if you're replacing refined carbs with fat, then that's going to be good. If you're replacing refined carbs with whole-foods, fruits and vegetables in their natural form, that are naturally low in glycemic index and glycemic load, even better. And even if you're genetically more alike...

**Dr. Hyman:** But we...olive oil on your vegetables, is that bad? I mean...

**Dr. Ornish:** Well, I've seen people say, "Well, olive oil is good for me," they just pour it on their food, they're getting literally hundreds of calories they don't need, because it's 1 tablespoon of olive oil has 14 calories. So you pour a lot of, you know, dip your bread in it, pour it on your food, you're getting tons of calories you don't need. Which would be better off, if you could avoid that.

And yes, there is a genetic predisposition, you mentioned the study by David Ludwig and Walter Willett, or the people in Indian...South Asian countries, they have a harder time metabolizing carbs. But if the diet that you're recommending, that I'm recommending, at least, is low in glycemic index and glycemic load and animal protein, then the fact that some people may be able to metabolize that better than others becomes less of an issue, if you're not giving it to them in the first place.

**Dr. Hyman:** Right, exactly. I think it's really fascinating, I think we're just beginning to understand this era of personalized nutrition, personalized medicine. We're just getting to the forefront of that. And I think it's fascinating that there's

different genes that regulate your ability to process fat, and saturated fats, and unsaturated fats, that your ability to process carbs, and I started to look at that, and I think that's going to help us even become more smart about what to recommend. Because it's not one size fits all.

**Dr. Ornish:** Well, that's why in the book "The Spectrum" that I wrote, it's really based on...okay, if you don't have heart disease, if you don't have prostate cancer, if you don't have a life-threatening condition, you're just trying to stay healthy, you can experiment.

I ran Google Health with Marissa Mayer from 2007 to 2009, and we were trying to come up with all these complex algorithms for personalizing a lifestyle intervention. And one day I said, "You know, I think we're going about this in the wrong way, let's make it radically simple." Start where you are. And once you call foods good or bad, it's a very small step to saying, "I'm a bad person because I ate bad food," there's all this kind of finger-wagging and moralistic stuff..

**Dr. Hyman:** I would say soda's bad. I don't think there's a role for soda as part of a healthy diet, I don't agree. Or Crisco, or...

**Dr. Ornish:** Well but again, once you make...you could use the same logic that you have, like if you have meat once in awhile, it's probably not going to hurt you, somebody could say, "Well if you have a soft drink once in a while it's not going to hurt you." So, I'm not saying that... I don't drink soft drinks.

**Dr. Hyman:** But you probably don't have Crisco once in a while.

**Dr. Ornish:** What's that?

**Dr. Hyman:** You probably don't have Crisco once in a while.

**Dr. Ornish:** No, I don't have soft drinks or red meat, you know? So that's the thing, but some people might. So, anyway, what I did is I categorized foods from the most healthy to the least healthy, and say what matters most is your overall way of eating and living.

So if you're going to indulge yourself one day, it doesn't mean you cheated, or you're bad, or you failed, just eat healthier the next, and so on. I think that's a lot more sustainable. Because if you go on a diet, sooner or later you're going to go off it, and then people are going to flog themselves with all these shame and guilt and anger and humiliation, which I think really are bad for you.



**Dr. Hyman:** That's so true, it's so true. Well this has been an awesome conversation, Dean. I love you, you're amazing, thanks for inspiring all of us for so many years. And teaching the world that actually you can reverse disease through lifestyle. And that complex of lifestyle interventions, is really a take-home for people. It's not just one thing, you have to sleep well, you have to connect, you have to move, you have to eat right.

And all these things together have profound influences far beyond what were actually expected, and what we're now actually seeing with newer techniques of genomics and metabolomics, and all sorts of genetic techniques to understand how our genes are turned on or off by these powerful lifestyle interventions. So, thank you Dean, I encourage everybody to go to your website, tell us what that is and what they can do there.

**Dr. Ornish:** Well thanks, Mark, and you know, as you say we agree on a lot more than we disagree, and I think out of that disagreement it brings us all closer to the truth. So, our website is [Ornish.com](http://Ornish.com), everything on there is free. There's recipes, guided meditation, support groups, videos, all the PDFs of all the articles we've been talking about, it's all there, it's all free. So, I appreciate the chance to share this with everyone who's watching and thank you for all that you're doing, Mark. Take care.

**Dr. Hyman:** Thank you for your work, Dean, thank you.