Good Calories, Bad Calories, and the Obesity Epidemic: What's the Connection?

Eat more and pile on weight. Eat less and loose weight. Or is it that simple? HOW and WHAT should we eat to stay fit and stay away from obesity? We are talking to investigative science & health Journalist and co-founder of the non-profit Nutrition Science Initiative (NuSI.org) Gary Taubes, to discuss the relationship of Obesity with different kinds of Calories, the current state of nutrition research, and mull over some controversial concepts in nutrition science. Mr Gary Taubes is a recipient of the Robert Wood Johnson Foundation Investigator Award in Health Policy Research.

Mindy Stone, who grew up fighting a weight problem from age 11 and found success with the Ketogenic diet will join us on the panel. Mindy hosts a Keto Support group in Lane County Oregon and is passionate about food politics and how it controls what we eat. This journey has inspired her to create “Training Wheels to Health” a coaching business to help others get off highly processed foods and onto a whole foods way of eating.

Full Transcript:

Shweta Mishra: Good afternoon and welcome to Cure Talks. I am Shweta Mishra, your host, and today we are exploring the root cause of obesity, the obesity epidemic, and its connection with different kinds of calories we eat – with our eminent expert, investigative science and health journalist and cofounder of Nutrition Science Initiative Gary Taubes. For decades, we’ve been advised to eat low fat diet, restricted in calories and exercise more in order to lose weight. However, the obesity epidemic is still consistently on rise. Millions of people struggled with weight issues and are not able to achieve their goals following these recommendations. On the contrary, many people have found success in losing stubborn weight with Keto Diet, a diet low in carbs and high in fat. This brings us to the question, are we even going in the right direction with our current food guide pyramid? Gary Taubes is here today to help us with the explanation on so many confusing concept in nutrition science and policy and enlighten us as to how keto diet may be helpful in improving many chronic conditions including obesity. A Harvard and Stanford graduate, Gary has focused his reporting on controversial science more recently nutrition, obesity and public health policy. He started to investigate publications in nutrition science in 1995-2000 and since then he has written several books like the Case Against Sugar, Why We Get Fat and What To Do About It, Good Calories, Bad Calories – Challenging the Conventional Wisdom on Diet, Weight Control and Disease. Many people have been benefited by Gary’s way of thinking, and if you visit Gary’s social media pages, you will find that this fans claim that in addition to obesity, they have gotten rid of chronic diseases like diabetes, metabolic syndrome, acid reflux, insomnia, and more following his writing. I welcome you to Cure Talks, Gary.

Gary Taubes: Thank you for having me.

Shweta: Pleasure is all ours Gary. My co-host for today’s talk is Mary Kay Irving. Mary is a nutrition educator specializing in ketogenic lifestyle and a psychotherapist. She believes Gary’s book played a big part in her personal recovery experience and motivated her to go back to school to study nutrition. We also have Mindy Stone on the panel. Mindy grew up fighting weight problems from the age of 11, which led her to eating disorders and then a lap band surgery. She finally found a solution with the problem with a Keto diet,

so much so that she started a keto support group and it's create her business, Training Wheels to Health" to help people get off highly processed food. We will also be joined by Suzanne Garrett. Suzanne can be considered as an "Early Adopter" of Type II diabetes and was diagnosed with "Syndrome X" in her thirties who reversed Type II diabetes and obesity with Keto and her journey began with Gary Taubes and his book, Why We Get Fat. So I welcome Mary, Mindy and Suzanne to Cure Talks, and before I begin, I remind our listeners that we will be discussing questions sent in via email in the last 10 minutes of the show so you can email your questions to shweta@trialx.com or post them in the comments section on Cure Talks website. So to begin with, Gary, to give our audience a bit of a background on the root cause of obesity, I begin with the same question that is the topic of our talk, what in your opinion, are good calories, what are bad calories when it comes to talking about obesity and the obesity epidemic and is quality more important or the quantity of food we take in managing obesity?

Gary Taubes: So the answer to the last question is yes. Let me just give our listeners, just a brief background on myself because as you heard, I'm an investigative journalist, science journalist in particular, so I'm not a physician. I'm not a nutritionist, I'm not a dietician. But in that sense my research represents the only investigation into the history and science of obesity and diabetes at a time when they're both, the epidemic prevalence in both our country and around the world. And in the course of that research, I happened to learn some fascinating facts that the research community hadn't. And so that's why I ended up with the book that's arguing that much of what we know about obesity and nutrition disease is wrong. It's kind of a cliche, but in this case that's all I can say. So the question is what is it that causes obesity, which calories are good, which calories are bad. For the past century, the conventional thinking on this disorder is that it's an energy balance disorder until the only thing that foods bring to our body that influence whether or not we get fatter is their caloric content and it's such, if you want to lose weight, you have the less take in fewer calories. It doesn't really matter which, although we've targeted fat calories because it was the calories in the diet. And then of course you have to exercise more. That's the conventional thinking. It's what's in the guidelines and virtually every health organization in the world. Over the course of my research, I realized that as part of World War II, there was the best medical researchers in the world who had to be in Germany and Austria had come to the conclusion that it had to be a hormonal regulatory disorder.

So something disturbs the hormonal regulation of fat accumulation such that some people accumulate fat easily and others don't. And by the 1960s after the necessary technologies were discovered, it became clear that the hormone insulin is the dominant regulator of fat accumulation in our fat tissue and the fat metabolism, whether or not we're going to burn fat or store it and when insulin is elevated, we store fat. That's what we do. And, this connection between insulin and fat accumulation implicated carbohydrates, carbohydrate rich foods, bread, pasta, potatoes, rice, the higher glycemic index, the easier they are to digest, the worse they would be the more fattening and then sugars in particular and sugary beverages in part because of the effect that they have on our liver, on the accumulation in liver fat. So the conclusion I came to in my book and what I'm trying to pass on to readers and the reason why an investigative journalist now has fans, is that we get fat because of the carbohydrates we consume and that if we don't want to be, if we want to be lean and if we want to be healthy, then we restrict those carbohydrates, not calories, not dietary fat, the same message that Atkins has been giving for 50 years. It's the message and a whole host of best selling diet books from protein powder and sugar busters to south beach and I'm just arguing that it's right. And that for those of us who fatten easily, we're different than lean people. We can't eat what lean people eat and we have to eat very carbohydrate restricted diets. And for some of us that means ketogenic diets would effectively have virtually no added carbohydrates, no nothing that you wouldn't get from green leafy vegetable. So that was my long answer to your short question, Shweta

Shweta: Okay. Alright. Thank you for that explanation Gary. So many people would really want to try keto diet, but they almost shudder at the thought of getting a heart disease and other complications that the current studies portray that a high fat diet may cause. So this association has been really confusing for many people. What is your opinion and what advice do you give to people to keep their hearts healthy?

Gary Taubes: Well, the second investigation I ever did in this field was a year long investigation to the journal Science in which I interviewed 160 odd researchers and administrators for one magazine article, one magazine investigation, and it was on whether or not dietary fat is a cause of heart disease, this was back in 1999, 2000. And the conclusion I came to, was that the evidence was simply never there to implicate saturated fat or dietary fat. And for the most part, our health organizations have been slowly moving away from that prognosis that that advice that we should avoid fat and saturated fat. Again, they're not moving as quickly as I think they should, but they are. So as we came to the conclusion, as our research community was fixating on the idea that dietary fat and saturated fat was the cause of heart disease in our diet, working through LDL cholesterol, there was another hypothesis that was evolving, that was far stronger and far more compelling, which is that the cause of heart disease, so when you're at high risk of heart disease, it's not just because… LDL may or may not be elevated, your LDL, but your body is going to be manifesting a whole health sort of metabolic disorders. You'll be, people are getting fatter, whose waist size is increasing are at high risk of heart disease. People who have low HDL cholesterol, the good cholesterol, that's almost the single best marker of heart disease risk, low HDL, people have elevated triglycerides or high blood pressure and all of these are glucose intolerant. They're prediabetic. All of these increase your risk of heart disease tremendously. They all trend together. They're all driven by the carbohydrate content of the diet. Dietary fat plays no role in any of these.

And the research, the existing research, which is only a year or two in clinical trials, demonstrates pretty clearly that when people are told to eat ketogenic diet, and again I say told to eat, because they tend not to follow them faithfully when they do it, but when they're told to eat these diets and they respond by eating more fat and more animal products, more saturated fat and fewer carbohydrates, all of this metabolic cluster of disorders improves. It's called Metabolic Syndrome. A half of the adults in America could probably be diagnosed with metabolic syndrome. It's the pretty much the greatest risk of heart disease because it combines all these other factors that individually increase risk. And it's just clearly in the clinical trials demonstrate that when you go on these diets, that metabolic syndrome for the most part either improves or goes away. And that would, that's a strong indicator that heart disease risk is getting smaller, not larger, even though you're eating a lot of fat.

Shweta: So. So that is true for any genetic predisposition, I mean, people have different genetic predispositions?

Gary Taubes: That's what I would. I mean, again, all we have to go on as well. The theory says, if you reduce the carbohydrates and replace with fat and you lower your insulin as low as you can your, you'll stop gaining weight, you'll lose weight, your HDL will get better. Your triglycerides will improve. That's what the theory predicts. Blood pressure should come down and then this is what I've seen in the clinic and this is what's seen in the trial. Let me actually describe one way that this was described to me by a physician in Vancouver, a very, very bright guy, I interviewed a year ago and I wish I had thought of this, but I didn't. He said for the past 50 years we've been prescribing diets on the basis of a hypothesis and the hypothesis is we tell people to eat less and eat less saturated fat. They'll lose weight and now they've left saturated fat, they'll get less heart disease and they'll live longer and we have no idea if that hypothesis is true even if our patients live to 80 or a hundred or 60. You have no idea whether being on the diet influenced that and on top of that, while we've been giving that advice, we've had obesity and diabetes epidemics. On the flip side, he said his clinical observation, somebody comes into my waiting room and they're overweight and they're diabetic and their blood pressure is elevated in their own, diabetes drugs and they're on blood pressure medications, and they are on cholesterol medications, and I put them on one of these low carb high fat ketogenic diets and you can watch them get healthier.

Their weight comes down, their blood pressure comes down, their diabetes in many cases goes away. They get off all these medications and so the patient knows they're healthier, the patient feels better, the patient's lighter, and then you're supposed to worry if their LDL is elevated, which is still a hypothesis, the hypothesis that everyone happens to believe, but it's not a very well tested hypothesis in the relationship of this kind of

diet, and this kind of dietary therapy.

Shweta: Okay. Well that's interesting to know. So moving onto the Weight of the Nation Conference highlights, could you please take us through the important highlights of that conference that just happened in the first week of November, especially in terms of the role of ketogenic diet and ketosis in reversing diabetes and chronic diseases like metabolic syndrome?

Gary Taubes: Well, this is so the Weight of the Nation was a conference held here in San Francisco organized by a group called Jumpstart MB and it had many of the leading researchers and influencers in this low carb ketogenic diet community. So but the most important finding in all of these is this observation that Type II diabetes resolves on ketogenic diets or goes into remission or is reversed depending on what terminology you want. I have to apologize, by the way, I have a dog who thinks he's an excellent watchdog. So what'd you may be hearing in the background is sporadic barks, is one of the many Amazon delivery trucks come by. There's a organization, a startup in San Francisco called Virta Health. And Virta has been running a clinical trial at the University of Indiana with a Dr Sara Hallberg, the PI in which they've been taking individuals with Type II diabetics and then with the counseling and medical coaching and a telemedicine through smartphones and internet intervention have been putting these patients with diabetes onto ketogenic diets, which again, a ketogenic diet is a diet that replaces virtually all of the carbohydrates with fat.

So you're eating green leafy vegetables and the meat, fish and fowl and dairy for the most part. And, what they found with these diets is that the Type II diabetes for the most part is a reversible disorder. It's not a chronic disease that requires drug management for the rest of a patient's life. It's a disorder that can be reversed with diet that in least in virtus demonstration, many people find this thing. Most people find sustainable and actually quite pleasurable. So they've been getting people off virtually all of their medications and getting the Type II, the patients with diabetes who are on insulin therapy, a large proportion of them are able to quit the insulin therapy. And with this, they see a concomitant weight, significant weight loss, so 15-20% without the patient to actually in any way trying to achieve weight loss. So that to me has been the driving force in getting these ketogenic diets accepted. If you're 30 pounds overweight and you go on a ketogenic diet and you lose 25 or 30 pounds and you're still unhappy with your life and your marriage is still problematic and you don't like your boss and now you can't self medicate with donuts and beer. It is a questionable trade off. But managing Type II diabetes or managing obesity,or managing these diseases for your entire life are such a burden. And if you can eat in a way that is sustainable and pleasurable and allows you to be in effect, disease free, that's an entirely different circumstance and that's what what people are going to want to keep with, keep alive for the rest of their life and makes this question of sustainability almost irrelevant if you can be healthy on this diet, but you know that if you fall off, you won't stay in much easier decision to stay.

Shweta: Thank you for sharing all these studies with us, Gary, and we look forward to more conclusive data in the coming future conferences on ketogenic diet. With that I'll just move ahead and hand it over to Mary Kay, our co-host for today. So she has some couple of good questions for you. Mary, you are on air.

Mary Kay Irving: Hello? Can you hear me? Yes. Great. I am so pleased to be here. Mr Taubes. I, was introduced to your book Why We Get Fat back in 2011 when I shared with a friend of mine that I had developed prediabetes and this was after recovering from cancer through conventional treatment as well as a lifetime of struggling with depression and anxiety. So reading that book completely changed my view of course because it was so different to conventional wisdom and within a matter of weeks of eating in a way that I deduced was recommended from your book and everything changed my mood and my energy. So, I did indeed reverse prediabetes numbers and also surprisingly lost weight without even trying or changing my diet, my exercise. The most surprising thing was to me is that it also eliminated my lifetime struggle with depression, so, so pleased to be able to be here with you. And my first question, that I'm going to ask is from a friend of mine and follower on my Facebook page and she wants to know what is the connection to cutting calories versus exercising for weight loss. And her million dollar question is what is the best way to lose weight. She keeps reading that you exercise for your health, but don't expect to lose weight through

exercise only if you cut calories. And then the follow up is.

Gary Taubes: So the argument that I've been making is that, as you know, obesity, it's not an energy balance problem. It's not about how much you eat and exercise. The world is full of thin people who eat a lot and never get off the couch. And it's full of people with obesity who don't go to the gym faithfully and often don't even have enough to eat and yet still remained fat. So I've been arguing that obesity is a hormonal regulatory disorder, and as such, it's your fat accumulation is determined primarily by the hormone insulin. And if you want to get fat out of your fat cells, as was pointed out by Nobel Prize winning scientist in the 1960s, with the fundamental thing you have to do is lower your insulin levels. And for many of us, that means lowering insulin as low as they will go. So you could lower insulin temporarily through exercise. It's about a 36 hour effect, which isn't good enough. You can lower insulin a little bit by cutting calories because when you cut calories, you will also cut carbohydrate calories. So you'll be starving yourself a little bit, but you also be lowering insulin a little bit. The most efficient way to do it is by removing the carbohydrates which are secreting insulin in response to keeping protein relatively modest, and then replacing the carbohydrate calories with fat. And now you're eating a ketogenic diet, but you're also almost certainly going to be mobilizing fat from fat cells and burning that fat for fuel. If you want to lose fat, you have to get the fat out of the fat cells and burn it and the way you do that in effect is a very low carbohydrate, high fat diet. And we know it works. The question of long term health is a good question, but in the short term and in the existing trials, and for many of us in this world, we've been eating this way for 10, 15 years in my case. And so far I have no obvious signs of incipient heart disease, which is what people fear.

Mary Kay: So, her follow up question was whether you have an opinion on intermittent fasting for weight loss.

Gary Taubes: And I do, I think intermittent fasting. And so the idea is not only do you want to keep your insulin as low as possible because that means you'll be burning fat for fuel instead of carbs. But you want to keep your insulin as low as possible for as long as possible because the longer and the more hours in the day you do it, the more hours in the day you're burning your own fat instead of storing it or keeping it stored. To me, intermittent fasting is probably a way to just maximize the length of time during the day in which you're burning fat for fuel. And if you do that again, you'll lower your weight. So and I recently was in Zurich at a conference and there were 50 of us sitting, at a big round table which about 40 odd members of the low carb research community and low carb physicians community. And I asked how many of the people at the table were doing intermittent fasting and that's roughly 45 of them raised their hands. And by that it's a very simple idea you just cited. In my case, I stopped eating breakfast a year and a half ago and I lost 12 pounds I didn't think I needed to lose and I felt I had more energy. Now, whether this, and this appears to be a common response to intermittent fast, my wife would like it if I would go back to eating breakfast because she thinks I'm too thin and I don't want to do it because I prefer the mental clarity I have in the morning. So there are not a whole lot of clinical trials, but with something like intermittent fasting, you don't need a clinical trial to see how it influences your health. You can try it and if you feel better, you'll have to get through a few days of being hungry in the mornings. If you choose to skip breakfast like I do, but pretty quickly people seem to adjust. I took me three days and then you could see how you feel and see what happens.

So people forget that for the short term effects of these diets, we don't need clinical trials. You need the clinical trials to know like is intermittent fasting, is skipping breakfast better than skipping dinner or is going 18 hours better than going 24 hours twice a week? Those are the kinds of questions you need clinical trials to answer and will I live longer if I do it because God doesn't give us that information, but to find out, do I lose weight and feel better in the short run of it, does my blood pressure come down and my A1C come down, that's an experiment you can do yourself. No need to find out what happens in the short run when you do it yourself.

Mary Kay: Yes. And that, that has been my own personal experience as well. So thank you for that. So the next question, how do high fat diets affect the microbiome and what concerns, if any, do you have or does the research suggest about a long term impact on the microbiome of the ketogenic diet?

Gary Taubes: Yeah, so this is a kind of question we really can't answer. Well, microbiome research is so new that it's hard to really. I find that I'm skeptical of how significant that really is. When I was trained to think by the physics community, they used to describe the front line of science, little kids playing soccer. So they kicked the ball over here and everybody runs over there and then they kicked the ball on the other side and everybody follows a ball and if you were watching the game from above, you wouldn't actually know where the goals were, all you'd see is this sort of chaotic running after the ball. And that's kind of what scientists. So the microbiome became the ball about 5, 10 years ago and now it's the hot thing and everybody's running after it. But maybe 20 years before we find out if that's where the goals are. As for the long term research, there's studies, people publish this and a common problem in this together. A lot of people who are sort of morally or ethically opposed to ketogenic diets or through cognitive dissonance are posed and one group happens to be at the Harvard School of Public Health. And what they do is they do these surveys of populations and they look into the populations and who seems to eat relatively few carbohydrates. And then they say those people don't live as long as people who eat relatively more carbohydrates. And then that somehow is translated into ketogenic diets are dangerous, when they're not studying people on ketogenic diets are not studying people who are anywhere near being on ketogenic diets.

And even if they were studying people on ketogenic diets who started 20 or 30 years ago, these would have been people who were struggling with obesity, who may have lived shorter lives anyway, but may have extended their lives a little bit or significantly by the ketogenic diet. It's like I said, all we know is in the short term, they make people healthy in the very short term, it's hard. Yeah in the first few days or the first week, it can be hard for people to transition into burning fat for fuel rather than carbs and they'll have some unpleasant side effects. But in the long term and over the course of the next year or two, there's simply no evidence that these diets do anything other than make people healthier and leaner.

Mary Kay: Right. So basically the jury is still out on the microbiome and just don't have enough of the studies yet as well as for the long term effects. I've heard and I suspect that there's a lot of people, as I'm sure you know, that aren't doing the ketogenic diet in a particularly healthy way. So they might be skipping the vegetables altogether, which is going to have an impact on the microbiome. So there's other factors.

Gary Taubes: Yeah, there's a lot of, it's hard to say. So this is how a carnivore, there is a lot of chatter now on the Internet and in the media on the folks who live exclusively on meat. And this is good for them or bad for them. Now, again, on one level, they, if I assume that they transition to eating only meat and they feel better, they're going to stick with it. And if they don't feel better, they're gonna quit. I would, I'm not going to say that makes me feel worse than I did beforehand. But on the other level, are they somehow not fueling the necessary gut bacteria for healthy bowel movements or whatever it is that bacteria is doing. And the answer is we don't know. These people, the ones who stick with it, say they benefit. And the ones who don't stick with it, we tend not to hear from. And so there's just, again, there are a lot of things were just, the science is ill suited to answer. Certainly there are populations that existed on virtually no vegetables, no carbohydrates whatsoever. In the end you are with our classic example, the Masai warrior population. So, but again, did they live to be 90 or 60 or 40? I couldn't tell you. And if they lived to be 40, if that was their average longevity. Was that because like the inuits just hard to live and not kill yourself after 40 years living in the Arctic? Or is it because they were not eating enough broccoli? You need clinical trials to answer those questions and those trials don't exist.

Mary Kay: So that's a perfect lead in to this next question that I have bringing in different phenomenon that we see in different cultures. What are your thoughts on seemingly contradictory impact of higher carb diets in, for example, the Dutch population where their diets are very high in sweets and grains and dairy as well as potatoes and vegetables and your thoughts on the carnivore diet, you mentioned a little bit, versus the healthy aging and folks in blue zones who eat very little if any animal protein.

Gary Taubes: Well, we're always going to find populations that eat considerable carbohydrates and little protein and are healthy. Southeast Asia, billions of people who seem to be living relatively long, healthy, chronic disease free lives and lived on rice and depending on the area, wheat primarily, on the Dutch population, when I hear that tonight, it's very high end. We'd want to know, how high is very high. And

what's the history of their sweet consumption, and what form are they drinking their sweets or eating them? I very much doubt despite the fact that the Dutch played a key role in the sugar trade, and so they have a history, Europeans in general tend to be about a half a century to a century behind the US and England in sugar consumption and as such the fact that obesity and diabetes, which is possibly passed on from mother to child in the intrauterine environment, might also be half century to century behind. As for the blue zone, these are populations that also ate virtually no sugar or white flour, so you could think of these studies as you look at what healthy people are eating and these are unique parts of the world. Sardinia, you ignore some of what they're reading if it doesn't fit your theory. Sardinia is one example, it's the blue zone where if you read the Non Blue Zone literature, they talk about the role of pork and fatty fish like sardines in the diet. If you read the Blues Home Literature, they play that down and act as though they eat low fat and low meat diet. So it's hard to judge, but these are people who are living isolated existences that are away from major urban centers that relatively to date exists the date in the sense of stress and then they don't eat any of the modern foods, they're not drinking Coca Cola three times a day and drinking orange juice and eating sugary snacks for lunch or breakfast or in between meals or any of that. They're just, they're eating the foods that they've been eating for hundreds, if not thousands of years, so that would explain why they're healthy and they live so long. Then the question is, if you took somebody who wasn't healthy, I am predisposed to obesity and diabetes, people fatten easily and put them in that environment and have us eat their food. I bet we would get a little healthier and we might even lose a little weight, but would we get as healthier as we did if we ate something like a ketogenic diet and I very much doubt that.

Mary Kay: Good points and there's a lot of factors that we've not been able to isolate out. Okay, so that's all from me for this moment and we're going to move on to Mindy Stone from our panel. She has a few questions for you as well.

Mindy Stone: Hi Gary. Thank you so much for your work. I have audio books of yours and I listen to them all the time. So my questions are a little bit more on the social side. My first question is, are you seeing the shift towards low carb, high fat ketogenic diets? And if so, what signs are you seeing or hearing about?

Gary Taubes: Okay, so one way I think about this, when I started doing this research, having no idea where I would end up, by the way, in the year 2000, there were maybe a half a dozen positions in the United States and around the world prescribing low carb, high fat ketogenic diets to their patients. And half of them or more had written diet books. There might have been some others out there we didn't know about, but if so they weren't telling me they weren't talking about it and if they told their patient's teeth this way and their patients did and then the patient saw another doctor, like a cardiologist, the cardiologist would talk them out of it, saying you're killing yourself. Today, by my estimate, there are probably 10 or 20 or 30,000 physicians worldwide who are now prescribing these diets. You think that the most important thing they could do for their patients is convince them to eat these low carbohydrate, high fat diet. Part of this. It's been driven because their waiting rooms, have gotten more and more full with patients with obesity and diabetes and they themselves have gotten fatter and fatter over the years. Physicians go looking for answers. They question. It's easy to question the conventional wisdom if you're doing exactly what the conventional wisdom tells you to do when you're reading healthy and you're working out and you're getting fatter anyway, and if your patients are getting fatter so they look for, you go on the Internet and you look for what to do when you find the low carb word.

The Internet has taken the low carb word out of the control of the gatekeepers in the medical community and made it easily accessible so all around the world and certainly like there are several thousands. In Canada, there are at least several thousands in the US, if not more, you can kind of from my position, I could see the tip of the iceberg. I have no idea how big the iceberg is and they are shifted and these diets and then other physicians so used to be Dr. put the patient on a low carb, high fat diet. The patient loses 50 pounds, goes to his cardiologist. Cardiologist is why you've lost 50 pounds. What are you doing and the patient says why I am eating Atkins, and the doctor says you can't eat Atkins, that'll kill you, here have a donut and get outta here and donuts and statins and then patient falls off the diet. Now that same patient goes to see the cardiologist. The cardiologist says, what are you doing? And he says, what? I'm doing this low carb, high fat ketogenic thing, and the cardiologist says, oh, that's interesting. I've been hearing a lot about that and the

next time the cardiologist sees a patient with metabolic syndrome or prediabetes, he's obese. The cardiologists like say, I've been hearing a lot about this low carb, high fat ketogenic diet, and some of my other patients seem to be having great success on it, why don't you try it? So it's spreading because of work and that's how we sort of our whole card as we fight the establishment, there's absolutely no doubt that this way of eating makes people leaner and healthier at least for a year or two. And then so, and then the other thing is today, yesterday, the British Medical Journal published the results of one of the studies that might not for profit, a Nutrition Science Initiative funded, it was the most expensive, longest, the most rigorous study, yet had this question whether a calorie is a calorie is how it's shorten, but whether a calorie of carbohydrates had the same effect on fat accumulation is a calorie of fat. And this definitive, the result with I want to use the word definitive.

The result was that a diet rich in carbohydrates tend to promote fat accumulation and diets that are low carb, higher fat tend to a restrain the fat equation, which was what we would predict. And this was written up in the New York Times. Will it change the way people think? I think it slowly, it will. Again, a major study, there's another, the same group is following up with another $12,000,000 study that was funded by the foundation that funded my nonprofit and eventually if, depending on the results, I think within 10 years we might shift the thinking on this. But as we're working through the scientific evidence to nail this down, like I said, physicians and their patients are shifting because it works.

Mindy: That's excellent news to hear about the BMJ report. I'll have to look for that. But outside of seeking funds have like a billion dollars or more to do a controlled study on sugar grains or a high carb diet to test the hypothesis that sugar or grains or a high carb diet is a cause of obesity and diabetes, heart disease and other diseases. Is there a study or studies you may have already mentioned that you could refer people to which could sway more public opinion towards eating a low carb high fat diet?

Gary Taubes: Well, there is again this BMJ study obviously would literally came out yesterday. So that's an argument against eating any kind of a calorie restricted low fat diet of the kind we've been. The establishment has been promoting for 40 years on. One of the studies that I actually want to get funded and it is relatively inexpensive, the argument against ketogenic diets. If you look at, for instance, US News and world report and their annual diet reviews there are a committee of experts who represent the conventional thinking argue that these diets are dangerous, which is simply that they'll shorten your life. But again, it's simply incorrect because the clinical trials almost unanimously say they make people healthier and I'm only saying almost unanimously are invariably because I'm assuming maybe there's one or two out there that have 80 to 100 that don't. And then they say the diets are unsustainable and they're unbalanced because they restrict an entire food group and because they're unbalanced or unsustainable, which is like saying quitting smoking is unsustainable because people like cigarettes so much that they going to fall off the wagon and go back to smoking I would like. And then they advocate diets for obesity and diabetes, like the Dash Diet, which was relatively low fat diet designed to lower blood pressure or the Mediterranean diet, which sort of definitive trial on that was recently retracted because of some of the mistakes in it they didn't even should have retracted years ago for the critical mistakes. So they recommend Dash and the Mediterranean diet and even the vegetarian diet because they seem healthier and there's no studies comparing them. And so what I would like to do, and I think I know how to do this as a clinical, get a clinical trial funded that directly compares a vegetarian diet to a Mediterranean diet, to a Dash diet, to a low carb, high fat Ketogenic Diet.

In an environment in which the individuals in the study sustain the diet, they stick to the diet and I think I know how to do that. And we hope to raise money for this shortly. It's a relatively inexpensive study and show that over the course of the year, it'll start with a pilot for six months, but eventually over the course of a year to find out is it really true that had vegetarian or a Dash diet or Mediterranean diet is healthier than a low carb high fat ketogenic diet. And is it really true that they're more sustainable? And, again, if it turns out that if I were to switch my diet to vegetarian and I knew for sure that I was going to be healthier, I might do it. I certainly should be telling people that that's a fact. So I think this is a study that we absolutely have to do and it won't cost a billion dollars as this study that the pilot only costs about $600,000 and that money is raised and, and then the full study, if it's worth proceeding, if it turns out we can, we can keep people on the

diets as we think we can do this technique, the full trial would be a few million, which is also doable. So

Mindy: Very much so. Occasionally I hear parents or local school administrators talk about what kids are learning in school, technology and in particular making robots seem to be the focus of attention to prepare young people for future jobs. In your opinion, how much, if any, attention at all should go towards teaching children how to grow food, prepare food and/or preserved food in the schools?

Gary Taubes: Okay. This is a question that's a little bit beyond my expertise. I would, I would like kids to learn the basics of nutrition and I believe it, assuming I'm right and let's just assume what I've been arguing is true. And then I think students should be taught that and they should be taught that in school and it wouldn't hurt if they're taught the basics of cooking in this day and age too. And, the growing food, preserving food, that's an issue. Again, I live in California where if you could see through the smoke at the moment, you would see thousands of people who have fled here from countries where all they did was grow food and preserved they were hoping that their children will get education that will prepare them for other careers. So that's … but being taught what healthy eating is, I think it's vitally important we should have learned it from our parents, but our parents were infected by the misconceptions of our public health policy and have been taught the wrong things. So perhaps our schools can take over and guide. I wish I had learned how to cook when I was younger. So my mother was a wonderful cook. I should have learned it from her. I didn't. Now that I have my own children, I regret it and they're paying the price.

Mary Kay: I think that's an important point. Mindy, Gary, and thank you for those questions, Mindy. I'm just, I'm looking out for time here as we have to get to our listener questions eventually. And I have one question that I want to give from our other panelists, Suzanne Garrett, who could not be here today. So she asks, she states, Gary, that you've been following the low carb high fat lifestyle for over a decade and have recently achieved a 40 pound weight loss. What intervention did you apply to achieve this loss that are changed from your typical daily diet and health habits?

Gary Taubes: Okay. So let me answer this by just giving my own history. I first started this, so I was an athlete my whole life. I'm a big guy. In 2000, 2001,I tried this diet as an experiment at the recommendation actually of an economist from the Massachusetts Institute of Technology, and that's a long story. At the time I was around 230 pounds. I had been living in LA. I worked out regularly. I ate a very healthy low fat diet. I had been gaining two pounds a year for a decade, and tried the classic Atkins at the time, eggs and bacon and sausage for breakfast and lunch would be a half a roast chicken and green vegetables and dinner would be fish and green vegetables. And if I wanted to snack it would be, I don't know what cheese. Anyway, I went full Atkins, I didn't have a family or kids at the time. My parents had passed away. So I forget if I had a heart attack, nobody would care. Wasn't a tragedy as it was an experiment that I lost 25 pounds effortlessly. It was as though you walked down the street and just pounds fell off like you flicked a switch. And I now understand the science and saying I had flipped the switch is a reasonable way to describe it. Suddenly I was just burning my own fat and this was weight that I had struggled, pretty mightily against. I had been on low calorie diets. I had been on low fat diets. I had obsessed about food all day long as dinner came and I finally got to eat a handful of ice cream, scoop size of chicken salad. I'd been through that. You go on Atkins for lack of a better term and you eat a lot of food. It seemed like I was eating as much as I wanted and the weight came off. So eventually I stuck with it and as I did my research and learned the science underlying it and why it made sense and basically learned in the early 2000s what Atkins had learned in the 1960s, even though he does some of it wrong, I might've gotten some wrong too. Anyway, that was it.

So, I maintained a 15 pound weight loss for awhile when you consider that, over the years I would have continued to get heavier so people talk about a 40 pound weight loss. And it's in relationship to how heavy I would have been, had I never changed my diet. And then finally, a year and a half ago, I stopped eating breakfast. I tried intermittent fasting or time restricted feeding as another experiment. I didn't expect it to be compelling and turned out I lost a dozen pounds without trying and without being hungry. I just didn't eat breakfast anymore and I seem to eat a significant amount of food. I eat constantly between lunch and dinner. And then the last 10, I had a knee replacement in August and this was fixing a 40 plus year problem. It wasn't diet related. I had my cartilage removed in 1974 on my knee hadn't worked since the nineties and I

decided it was time to get it fixed and there's nothing like major surgery to cause. So the last 10 was the surgery. I don't actually recommend it that way, we'll come back frankly, because my wife complained again that I am too thin.

Mary Kay: Yeah. Does medical medical problems in flus tend to be a sure fire way to lose a few pounds of weight?

Gary Taubes: But all this experience. So as I typically didn't talk about this experience, because if you admit to having tried the diet as an experiment, the medical community thinks of you as biased as though you've joined a cult and so they don't have to take you seriously because you've done what they don't have the courage to do, which is actually experiment. Now, if I tried to diet and it failed on me, then I could write articles about how ketogenic diet was a failure. This is why it didn't work for me and I'm embraced by the establishment research community. But again, at the point of all this is, everyone can do this as an experiment. No matter how much it conflicts with your beliefs about a healthy diet, if you're getting fatter and if you're moving towards diabetes, you can do this as an experiment and see what happens.

Mary Kay: Yes, I very much appreciate hearing your personal story about it like, so many of us have experienced this anecdotal evidences is what's helping the movement grow. As you pointed out the Internet, we all get to share our stories and experience this amazing impact benefits to our health. So. Okay, well thank you. And now Shweta, our primary host has another question for you.

Shweta: Yeah, thank you, Mary Kay. Thanks for all your great questions and thanks for Suzanne's question. Gary, what I wanted to ask you now is about the Nutrition Science Initiative that you're involved with. So could you please brief us about that organization and what are you currently working towards at NuSI?

Gary Taubes: Okay. So the Nutrition Science Initiative is the nonprofit that I co founded in 2011 with the physician, Dr Peter Attia. He became the president and ran the organization and the goal was to raise funds to do, to fund research that can resolve these controversies that I had been writing about and done so much to call the, bring to the attention of the nutrition world and the world at large. So we had support primarily from a foundation in Texas, John and Laura Arnold Foundation, they were very supportive on their own. Over the course of five years, we were able to distribute about $30,000,000 in research funds to four studies. The third of which is the one I mentioned that came out yesterday in the British Medical Journal and it's written up in the New York Times and the fourth of which is the study of the effect of sugar on non alcoholic fatty liver disease. Nonalcoholic fatty liver disease is also epidemic in the world, in US today. It's very much related to obesity and diabetes and probably the same cause. And results from that study, I hope will be out within the next few months. They're in what we hope is the last round of review at a major journal. So at the moment, NuSI itself is, has a small handful of individuals.

I work, I'm president now and it's my hobby. I don't get paid for it and I have a scientific advisor in Philadelphia who gets paid when he works and an accountant who gets paid when she works and a researcher who gets paid when he does work. But we still exist. We still are a medical research organization. We could distribute funding. And the study I was talking about earlier is the study, I hope to raise money for over the next three or four months, optimistically you never know how long it's going to take to raise funds and we'll probably use NuSI to distribute those funds because it'll be easier when you're not getting all the money from one organization if it's coming from multiple philanthropists, it's probably funding to go to new things. So I think we're, for a group of amateurs who had never done this before, who didn't really know what they were doing when they started and had no idea what problems they would confront. I think the nutrition science initiative, we made a lot of mistakes. There are a lot of things we would do differently, but ultimately I think the studies we funded and the influence we have will help change the thinking on these vitally important issues.

Shweta: Alright! Thank you so much for that answer, we look forward to more stories coming out of the Nutrition Science Initiative organization. Mary Kay. I guess you have one more question and then we will

move onto listeners' questions.

Mary Kay: Yes. Gary, do you have any special strategies or tips that you might suggest for helping somebody who identifies as a carboholic or sugarholic or somebody coming off of the standard American diet to transition to a low carb diet? And would it be different? These tips and suggestions be different for somebody that has a gallbladder dysfunction? Are they able to do high fat diet?

Gary Taubes: Okay, so I'm gonna pass on the gallbladder question because as a journalist and not a physician, I certainly am not capable of answering, as there isn't even enough anecdotal evidence for me to say, I know, what's reasonable advice. But I spent last fall interviewing over a hundred practitioners who prescribe these low carb high fat ketogenic diet. 90% were physicians. There were some dieticians, some psychiatrists and psychologists. And I got a lot of different answers to the question I wanted to find out and speaking with these physicians, what challenges they faced and what challenges their patients face. And I got a lot of different answers to the question you asked me. So some physicians said they find it easier to ease carboholics and people eating the standard American diet into a ketogenic, low carb high fat diet. So first try to get them to get rid of the sugar or first try to get them to change one meal a day like change breakfast, switch from orange juice and cereal and low fat yogurt to eggs and Bacon.

And then three months later change again. There are a lot of different approaches to how best to do it. A lot of people thought you just just jump in. The problem is do you want to get below this threshold of insulin level and when you're your insulin is below that threshold, you're burning your own fat for fuel and you have the reason most people are doing this as they have too much fat on board so, they have plenty of fat. So the idea is if you can just jump in and deal with whatever transitional problems might appear, and we now know how to deal with those problems like called the Atkins flu where you feel sick for a few days or a week. And apparently is result of electrolyte imbalances that can be fixed by supplementing with sodium and magnesium once you get through it then most people, many people, again, we don't know the proportion feel terrific and then they're happy to stick with it because they feel some good eating this way. You have to convince them that the fat isn't going to kill them. The way I describe it now I say one of these people have convinced myself that butter and bacon are health foods and I hope the hell I'm right. I will never find out, but I treat them such though. So I hope that answers the question.

Mary Kay: Yes. Thank you so much.

Gary Taubes: Oh, let me actually add one other thought to that, which is there's nothing really we can do in life that's more important for our health than how we eat. And people forget this. Our food culture has helped us forget this. The idea is that you think about is go to the restaurant, and order, on the whole low carb ketogenic movement, just like the vegetarian movement is saying, Hey, stop and think about what you eat and think carefully about what you eat and think carefully about the foods you prepare and in the course of doing this with this low carb high fat, it helps to make the effort to understand why we're eating the way we eat. That phrase I heard a lot from my positions is to go through the rabbit hole, read the book, get online. It's a wonderful website called Diet Dr. com, run by a Swedish physician. You could learn an enormous amount just from these other resources about what works and what doesn't and why, if you're having trouble, other people have gone through and now to site, so there's probably tens of thousands of physicians prescribing it. There's clearly millions of people around the world who have tried this in some significant portion have benefited enormously.

Mary Kay: Thank you for those resources.

Shweta: Thank you Mary Kay and thank you Gary for your answers. I guess we're just running out of time, so I'll just quickly read out the listener's question. A couple of them. So I see two questions posted on coconut oil. So the person says, can you please talk about coconut oil? Will too much added fat stall weight loss. If I add some coconut oil to my coffee, I'm full for hours and my brain feels satisfied, but some low carb experts are against adding extra fat to things as you will not lose weight if you add a lot of fat. What's your opinion?

Gary Taubes: This idea that coconut oil is particularly healthy for us, you always have to stay healthy compared to what? So, and I think coconut oil is probably benign and that it's harmless and you can eat it and enjoy it and live a long and healthy life. But that's my belief is there's a few random, no randomized trials that confirm that one way or the other. One of the things I heard from these physicians, I was asking the question, what do you tell patients when they stall and why do you think patients stall and some physicians thought they stalled because they try to eat a low fat version of a ketogenic diet so they're not getting enough fat and they should add more fat, including coconut oil to your coffee and some thought that they're getting too much fat. So if you've got coconut oil in your coffee and you're stalled your weight loss, that's just one reason might be because you're burning the fat that you're consuming and not giving your body a reason to burn the fat that you've stored.

So I don't know who's right and it could be that it's different for different individuals on such. If I was taking a bulletproof coffee and putting coconut oil in my coffee every morning and my weight had stalled, my weight loss had stalled and I was still heavier than I want it to be. I would try to live without some coconut oil and see if that helps and I would give it three or four weeks to make a difference and if it didn't help then I would try something else. So there's a lot of what we're talking about involves self experimentation. So here are the general principle. You've got to get rid of these carbs and so you got to keep insulin low, you replace the carbs, mostly with fat, and then beyond that, here are various tools you can use to experiment with if the results are in yet what you would like them to be.

Shweta: Okay, thanks for the answer. I hope that answers the listener's question. The other question, I'll just read one more out because of we are at the end of our scheduled time. So the other question is, exercise is of highly dubious worth for losing weight, yet of great worth metabolically when one has diabetes. So why would that be?

Gary Taubes: Well, I think the benefits of exercise personally come from expending the carbohydrates you're consuming. So as I said, there's a long effect, that's been known for a long time that exercise, aerobic exercise increases insulin sensitivity for about 36 hours, actually until you have your first carbohydrate rich meal, then it stops. So I could imagine why that could be of benefit when one has diabetes. I'm not sure what the questioner means by great worth because I'd have to see the trials to tell me exactly how valuable exercise is for diabetes. There's a question about the type of exercise. There is significant evidence that resistance training is very beneficial and weight the fact on the idea that aerobic exercise burning off calories is beneficial, has been fading for years and there's virtually no meaningful evidence that it has a meaningful effect on weight loss. That said, keep in mind I'm recovering from a surgery that I probably never would have made it if I hadn't exercised. So I have mixed feelings.

Shweta: Alright. Alright. Thank you. Thank you so much for all these answers, Gary, and thanks for being with us here today and providing such a great deal of information. I hope it really will serve as a useful resource for many people who want to try out the low carb high fat diet and want to learn more about it. And it was really interesting to learn about your story, how you effortlessly lost 25 pounds and maintain a lot of it. I mean it is a dream for so many of us out there. But we still need to know if this will work for everybody else and for that we need to either self experiment or need more scientific evidence. So thank you.

Gary Taubes: We need more research.

Shweta: Definitely, yes. Thank you so much. Thanks Mary Kay, Mindy and Suzanne, thank you so much for accepting my invitation to join the panel and thanks for your insightful questions and that really brought out an informative discussion for us. And I thank my audience for your support and we look forward to having you all join us for our upcoming Cure Talks. We would love to hear your feedback about your talk and welcome your suggestions on topics that you feel should be covered here on this portal. If you would like to propose a topic for the talk, or if you you'd like to be on the talk, please email me at shweta@trialx.com, and for more information on upcoming Cure Talks, please visit www.curetalks.com. Until next time, thank you everyone. Have a great day. Thank you.