KETO CUT LIVER FAT BY 67% — BUT WHAT ABOUT CHOLESTEROL?#sugarmd Transcript

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Keto Study Results Overview

What if I told you What if I told you that in a new that in a new clinical clinical clinical study, people who study, people who followed a followed a followed a ketogenic diet ketogenic diet reduced the amount of reduced the amount of fat in their liver by 67%?

fat in their liver by 67%? You heard me correctly You heard me correctly, not by 6.7%, but by, not by 6.7%, but by 67%. And here it gets even more 67%. And here it gets even more interesting. People who interesting. People who followed the followed the followed the Mediterranean Mediterranean Mediterranean diet lost diet lost about the same amount of weight about the same amount of weight in the study. And people in the study. And people who followed a who followed a low-fat diet, low-fat diet, which is the opposite of which is the opposite of keto, also lost keto, also lost about the same amount of weight. But the keto group. But the keto group lost significantly lost significantly more liver fat. And about.

Introducing the Diet Comparison Study

And about half of the people in the keto group stopped group stopped meeting meeting meeting the criteria for the criteria for the criteria for prediabetes after just prediabetes after just 4-5 months. That's 4-5 months. That's all. So, should all. So, should everyone throw out their everyone throw out their bread, buy a bread, buy a 48-piece pack of bacon, 48-piece pack of bacon, and start adding and start adding butter to their coffee tomorrow butter to their coffee tomorrow morning? What do you think? Is morning? What do you think? Is that what you are doing? Well, that what you are doing? Well, maybe not so maybe not so fast, because there's a fast, because there's a big difference between a big difference between a well-designed well-designed well-designed ketogenic diet and what ketogenic diet and what I call the I call the internet keto diet internet keto diet or dirty keto as or dirty keto as some people call it, some people call it, right? And this right? And this difference may difference may explain why some explain why some people on the keto diet people on the keto diet dramatically improve dramatically improve their metabolic their metabolic health, while health, while someone else walks someone else walks into my office, for example, into my office, for example, and says, " Dr. Ergin, I've lost Dr. Ergin, I've lost 25 pounds, my 25 pounds, my triglycerides are great, my triglycerides are great, my sugar is down, but my LDL cholesterol is 220." What LDL cholesterol is 220." What happened? “Well, that’s happened? “Well, that’s exactly what we’re going to talk exactly what we’re going to talk about today. I am Dr. Ahmed about today. I am Dr. Ahmed Ergin. I am an endocrinologist. I practice in Port St. Lucie, St. Lucie, Florida, at the Treasure Coast Florida, at the Treasure Coast Diabetes, Diabetes, Diabetes, Thyroid, and Hormone Center. And let's.

How the Study Was Designed

And let's see what see what this this this new study actually found, shall we new study actually found, shall we? The researchers? The researchers took 42 people with took 42 people with obesity, obesity, obesity, prediabetes, and prediabetes, and fatty fatty fatty liver disease, which I liver disease, which I deal with every day, deal with every day, fatty fatty fatty liver disease. They liver disease. They randomly randomly randomly assigned them to assigned them to one of these three diets: a one of these three diets: a ketogenic diet, a ketogenic diet, a Mediterranean Mediterranean Mediterranean diet, or a diet, or a low- low- low- fat diet. The fat diet. The low- low- low- fat diet was more of a plant-based diet, plant-based diet, right? Vegetable. And this right? Vegetable. And this wasn't one of those wasn't one of those studies where studies where the researchers say, " Here's a diet pamphlet." Good luck. "See you." Good luck. "See you in 6 months." " The researchers actually The researchers actually provided the food." provided the food." So the participants also So the participants also met met met with a dietitian every week. And that's with a dietitian every week. And that's important because when important because when someone tells me someone tells me they're on the they're on the keto diet, it could keto diet, it could mean almost mean almost anything, right?

anything, right? One person's keto diet One person's keto diet is salmon, is salmon, olive oil, olive oil, avocado, eggs, nuts, avocado, eggs, nuts, vegetables, and chicken.

Another person's keto diet is bacon wrapped is bacon wrapped around cheese around cheese dipped in butter. Well dipped in butter. Well, these are not metabolically, these are not metabolically identical diets. In identical diets. In this study, the this study, the keto diet was very keto diet was very low-carb, with low-carb, with only 4% of calories only 4% of calories coming from coming from carbohydrates, while 73% came from fat.

Why Keto Affects Liver Fat

The Mediterranean Mediterranean diet contained diet contained much more much more carbohydrates, and the carbohydrates, and the low-fat diet even more. But here's even more. But here's what's interesting. The researchers what's interesting. The researchers adjusted calories adjusted calories so that all so that all three groups lost three groups lost about the same amount of about the same amount of body weight, about 10% of their body weight.

of their body weight. This allowed them to This allowed them to ask a fascinating ask a fascinating question. If question. If weight loss is similar, does the weight loss is similar, does the type of diet matter? The type of diet matter? The eternal question, is eternal question, is n't it? Probably so.

n't it? Probably so. The number 67% is an important The number 67% is an important number. Now let's number. Now let's talk about this. In talk about this. In terms of weight, all terms of weight, all three diets worked.

three diets worked. And let me…” And let me…” Emphasize that, Emphasize that, okay? But that's not the okay? But that's not the same as saying that same as saying that keto works and everything keto works and everything else doesn't. All else doesn't. All three groups lost weight three groups lost weight when it came when it came to weight loss. All three to weight loss. All three groups lost groups lost body fat. And insulin sensitivity improved insulin sensitivity improved in all three groups.

in all three groups. So, just to So, just to clarify. Now, clarify. Now, weight loss itself weight loss itself is powerful is powerful medicine. But here's the medicine. But here's the big difference. Fat in big difference. Fat in the liver the liver is different.

is different. The liver in this The liver in this study, study, study, especially the fat in especially the fat in the liver, was different. The the liver, was different. The ketogenic group ketogenic group reduced reduced reduced liver fat by an average liver fat by an average of 67%, right? By consuming of 67%, right? By consuming more fat. Interesting, is more fat. Interesting, is n't it?

n't it? The Mediterranean The Mediterranean The Mediterranean group lost group lost about 45%. That's about 45%. That's not bad, but not as not bad, but not as good as 67. The good as 67. The low-fat, low-fat, low-fat, plant-based group plant-based group also lost also lost about 45%. So, about 45%. So, even with this kind of even with this kind of weight loss, keto weight loss, keto seems to have had an seems to have had an additional effect on additional effect on liver fat. So liver fat. So let me let me say something. If you have say something.

Keto, Cholesterol, and LDL Concerns

If you have prediabetic or prediabetic or diabetic dystrophy, please have a, please have a liver ultrasound. If liver ultrasound. If possible, get possible, get an elastography to an elastography to check if you have check if you have fatty fatty fatty liver disease. I diagnose liver disease. I diagnose fatty fatty fatty liver disease every day and people liver disease every day and people don't know anything. And this is the don't know anything. And this is the most common most common most common cause of end- cause of end- stage stage stage liver disease or cirrhosis. And liver disease or cirrhosis. And by the end stage, by the end stage, you have virtually no you have virtually no symptoms. This is symptoms. This is not like acute not like acute hepatitis, where you hepatitis, where you will have pain in the right will have pain in the right upper quadrant, upper quadrant, nausea, vomiting, nausea, vomiting, fatigue. This is not true. This is a fatigue. This is not true. This is a very slow, very slow, insidious disease.

insidious disease. But this finding about But this finding about reducing reducing reducing liver fat was very liver fat was very interesting in this interesting in this study, study, study, especially for keto. And especially for keto. And biologically, that makes biologically, that makes sense, doesn't it? So sense, doesn't it? So how does keto actually how does keto actually empty the liver? I empty the liver? I mean, think of mean, think of your liver as a your liver as a metabolic warehouse, metabolic warehouse, right? So, when right? So, when you have you have you have insulin resistance insulin resistance, this compound can be, this compound can be overloaded.

overloaded. overloaded. The liver gets The liver gets fatty acids, right? fatty acids, right? Because your body Because your body breaks down fat into breaks down fat into fatty acids to fatty acids to transport it transport it in your bloodstream. Now it in your bloodstream. Now it can produce new can produce new fat from the excess fat from the excess energy. It could be, energy. It could be, um, from glucose, from um, from glucose, from carbohydrates, from fat, from carbohydrates, from fat, from anything.

anything. anything. Especially when Especially when carbohydrate availability and carbohydrate availability and insulin signaling promote insulin signaling promote lipogenesis, meaning you lipogenesis, meaning you eat a lot of eat a lot of carbohydrates, you just carbohydrates, you just eat a lot of insulin, eat a lot of insulin, and that will promote and that will promote accumulation in the accumulation in the liver. And eventually, liver. And eventually, fat begins fat begins to accumulate to accumulate to accumulate inside the inside the liver cells. So, this is liver cells. So, this is important. Insulin is the important. Insulin is the main driver of fat.

main driver of fat. accumulation, not the accumulation, not the fat itself. This is metabolic fat itself. This is metabolic dysfunction, right? dysfunction, right?

Associated with Associated with static static static liver disease, or mush, liver disease, or mush, or MS MASLD, whatever you or MS MASLD, whatever you want to call it. Uh, want to call it. Uh, we call it in the we call it in the vernacular, I vernacular, I think, fatty think, fatty liver disease, liver disease, right? Tell someone right? Tell someone you have MASLD, patients you have MASLD, patients will be like, "Uh, what is will be like, "Uh, what is this?" "Now drastically this?" "Now drastically reduce your reduce your carbohydrate intake, okay? Then carbohydrate intake, okay? Then insulin levels insulin levels will generally decrease.

will generally decrease.

Why LDL Responses Vary

If you lower your If you lower your insulin levels, your insulin levels, your glucagon levels glucagon levels will increase. Your will increase. Your metabolic metabolic metabolic mechanism will begin to mechanism will begin to shift from shift from using using using carbohydrates to carbohydrates to more more more fat oxidation and fat oxidation and ketone production. Now, in ketone production. Now, in this study, the this study, the ketogenic group had ketogenic group had the greatest decrease in the greatest decrease in insulin levels and the insulin levels and the greatest increase in greatest increase in glucagon levels. That glucagon levels. That explains it. Now this explains it. Now this hormonal hormonal hormonal environment promotes environment promotes the mobilization and the mobilization and burning of burning of burning of stored fuel, stored fuel, which is fat, rather than which is fat, rather than its constant its constant accumulation. Now, accumulation. Now, other recent other recent mechanistic mechanistic mechanistic studies studies studies have also shown that have also shown that ketogenic ketogenic ketogenic weight loss can reduce weight loss can reduce or lead to, or lead to, excuse me, a greater excuse me, a greater short-term short-term short-term reduction in reduction in reduction in intrahepatic intrahepatic intrahepatic triglycerides than a triglycerides than a non-ketogenic diet, non-ketogenic diet, despite despite despite similar similar similar energy deficits and energy deficits and fat loss. So, here's the fat loss. So, here's the thing. Keto is not thing. Keto is not magic. This is physiology.

magic. This is physiology. But physiology gets more But physiology gets more complicated when we complicated when we talk about talk about cholesterol. But, cholesterol. But, Dr. Ergin, my Dr. Ergin, my cholesterol level cholesterol level has increased, right? This is where has increased, right? This is where keto becomes keto becomes controversial because controversial because I see it clinically I see it clinically every day. Someone starts every day. Someone starts keto, they lose weight, their keto, they lose weight, their glucose levels glucose levels

improve, their improve, their triglycerides go down, their HDL, their HDL might even go up, and…" might even go up, and…" They feel They feel great, except they're not great, except they're not getting enough carbs.

getting enough carbs. That's a whole different That's a whole different story. But then story. But then they get a they get a blood test and their blood test and their LDL levels are way off the charts, and they LDL levels are way off the charts, and they may already have may already have heart disease, heart disease, they may have a they may have a family history of family history of heart disease. If they already have. If they already have inflammation, again inflammation, again, I'm not saying, I'm not saying LDL is bad. LDL is simply a is simply a lipoprotein that lipoprotein that carries carries carries cholesterol from one cholesterol from one place to another. But the place to another. But the problem is, problem is, if you have a lot of potholes and if you have a lot of potholes and potholes in the road, potholes in the road, you know, those LDLs you know, those LDLs will fall off and will fall off and cause accidents. That's exactly what cause accidents. That's exactly what I'm talking about.

I'm talking about. People who already have People who already have inflammation, who already inflammation, who already have undetected have undetected endothelial endothelial endothelial disease at the disease at the initial stage, these initial stage, these LDL particles, small ones, get under the, get under the artery, start artery, start to create inflammation, and they clump, they, and they clump, they clot, clot, clot, they create a clot in the they create a clot in the artery. So it's artery. So it's not that LDL is not that LDL is bad, it's just the bad, it's just the underlying inflammation underlying inflammation that creates that creates oxidized LDL, oxidized LDL, right? People get confused right? People get confused and say, "I stopped and say, "I stopped eating sugar, why is my eating sugar, why is my cholesterol higher?" cholesterol higher?" Because, you know, they Because, you know, they want simple want simple explanations. But the body is explanations. But the body is very complex, and that's why I… I'm creating this video…

What to Eat on a Smarter Keto Diet

I'm creating this video so you can so you can understand better. Because understand better. Because carbohydrates and carbohydrates and cholesterol are not actually the same metabolic variable. And a low-carb. And a low-carb diet doesn't diet doesn't automatically mean a automatically mean a healthy heart either. The healthy heart either. The main question main question is what you is what you eat instead of eat instead of carbohydrates. If you carbohydrates. If you take away bread, take away bread, pasta, rice, cookies, pasta, rice, cookies, soda, and soda, and potatoes, what potatoes, what will replace them? Is this will replace them? Is this olive oil? Is it olive oil? Is it avocado, nuts, avocado, nuts, seeds, fish? I seeds, fish? I live in Florida now and live in Florida now and the number of people who the number of people who hate fish hate fish is over 90%. I ca is over 90%. I ca n't n't n't understand this. I understand this. I mean, how can you mean, how can you hate fish and hate fish and expect it to be expect it to be healthy? This is simply healthy? This is simply amazing.

amazing. Anyway, and butter, Anyway, and butter, coconut, you know, if you coconut, you know, if you work with the person work with the person I see every day, I see every day, you know, butter, you know, butter, coconut oil, bacon.

coconut oil, bacon. I mean, I mean, coconut oil isn't coconut oil isn't terrible, but especially terrible, but especially bacon, sausage, fatty bacon, sausage, fatty red meat, heavy red meat, heavy cream, cheese all cream, cheese all day long. Well, that's day long. Well, that's important because we're important because we're talking about talking about saturated fats, saturated fats, right? And saturated fats, right? And saturated fats, I don't care what people I don't care what people say on YouTube. They say on YouTube. They could be could be professors or professors or someone else. They someone else. They may be the may be the majority… They're majority… They're majority… They're chiropractors and stuff chiropractors and stuff, but excuse me. The thing is, you, but excuse me. The thing is, you know, if know, if you ask 99% of cardiology professors, they'll cardiology professors, they'll say that saturated say that saturated fat will raise LDL cholesterol, increase the risk of LDL cholesterol, increase the risk of cardiovascular cardiovascular cardiovascular disease, disease, disease, especially in the context of especially in the context of inflammation, and a few inflammation, and a few false prophets aren't going false prophets aren't going to change that. And replacing to change that. And replacing saturated fats with saturated fats with unsaturated fats unsaturated fats actually lowers actually lowers LDL, right? And recent? And recent randomized data randomized data continue continue continue to confirm this to confirm this distinction. So distinction. So I don't

like I don't like talking about keto talking about keto as if it's just a diet, as if it's just a diet, just the only diet just the only diet you should you should follow. There are follow. There are also many versions of also many versions of keto. The Mediterranean diet has been proven to keto. The Mediterranean diet has been proven to reduce reduce cardiovascular cardiovascular cardiovascular disease. So, disease. So, if you listen to if you listen to someone who says, "You someone who says, "You have to have to have to follow keto follow keto or you're doomed." or you're doomed." “Well, that’s not true. How “Well, that’s not true. How can this be, can this be, right? It's like saying right?

Prediabetes and Metabolic Improvements

It's like saying you're either my religion you're either my religion or you're doomed. Good or you're doomed. Good luck with this luck with this approach. The keto diet approach. The keto diet is not a license to eat is not a license to eat unlimited amounts of unlimited amounts of saturated fat. This is saturated fat. This is probably the biggest probably the biggest mistake I see.

mistake I see. People hear that fat is People hear that fat is normal, and normal, and somehow translate somehow translate that as "all fats are that as "all fats are unlimited." No, unlimited." No, brother. No, sister.

brother. No, sister. Olive oil and Olive oil and butter are butter are fats. Salmon or fats. Salmon or salmon and bacon salmon and bacon contain fat. contain fat.

Walnuts and processed Walnuts and processed sausage contain fat. sausage contain fat. Metabolically they are not Metabolically they are not interchangeable. If interchangeable. If your ketogenic diet your ketogenic diet consists consists consists mostly of mostly of butter, butter, butter, cheese, processed cheese, processed meats, and fatty meats, and fatty red meats, don't red meats, don't be surprised if your LDL cholesterol levels rise.

LDL cholesterol levels rise. Current Current cardiovascular nutrition guidelines cardiovascular nutrition guidelines still recommend still recommend emphasizing emphasizing emphasizing unsaturated fats and unsaturated fats and limiting saturated limiting saturated fats, as fats, as saturated fats can saturated fats can raise raise raise LDL cholesterol levels, which LDL cholesterol levels, which can also increase can also increase your small your small LDL particles. This does not mean LDL particles. This does not mean that the keto diet that the keto diet automatically causes automatically causes high LDL levels.

high LDL levels. In fact, participants in In fact, participants in this new this new clinical clinical clinical trial did not trial did not experience an overall experience an overall increase in increase in blood cholesterol levels blood cholesterol levels despite despite despite eating a eating a high- high- high- fat diet. And that's fat diet. And that's exciting, but it exciting, but it also doesn't mean that also doesn't mean that LDL can't LDL can't rise dramatically in an rise dramatically in an individual. The answer individual. The answer is…” will also be is…” will also be very variable very variable depending on genetics.

depending on genetics.

Key Takeaways and Cautions

Some people really Some people really overreact, don't overreact, don't they? And this is another they? And this is another fascinating part of the fascinating part of the keto story. Some keto story. Some people can people can follow a follow a follow a low-carb low-carb low-carb diet and their diet and their LDL levels barely LDL levels barely change, while others change, while others see them see them decrease. And some decrease. And some people also people also experience a huge experience a huge increase. Now, increase. Now, a study a study examining examining examining randomized randomized randomized low-carb low-carb low-carb trials trials trials has found something has found something particularly interesting. People particularly interesting. People with a lower with a lower body mass index tended to body mass index tended to have much greater have much greater increases in LDL.

increases in LDL. Now, in Now, in trials where the trials where the average BMI was average BMI was below 25,

LDL below 25, LDL increased significantly on increased significantly on low-carb low-carb low-carb diets. Meanwhile, diets. Meanwhile, trials trials trials involving people with higher involving people with higher BMI, body mass index BMI, body mass index, showed, showed much smaller much smaller increases or increases or even decreases. So, two people can, two people can follow a similar follow a similar diet and have diet and have completely different completely different reactions to reactions to cholesterol.

cholesterol. cholesterol. Remember, genetics Remember, genetics matter. Basic matter. Basic metabolic health metabolic health matters. matters. matters.

Body composition matters. And the Body composition matters. And the actual composition of actual composition of the diet also the diet also matters. And this is the matters. And this is the most important question, I think. And that's why, I think. And that's why I don't treat I don't treat nutrition like a nutrition like a religion. I treat it religion. I treat it like like like medicine. You medicine. You measure the reaction. That's measure the reaction. That's all. And here is the all. And here is the biggest mistake biggest mistake I see. Please don't just look don't just look at total at total cholesterol. This is a very cholesterol. This is a very common mistake.

common mistake. You know, a lot of people You know, a lot of people say, "Oh, my say, "Oh, my cholesterol is 240. Is that cholesterol is 240. Is that normal?" But that doesn't really tell me anything.

doesn't really tell me anything. At least, that's At least, that's not enough. I want not enough. I want to know the whole picture. to know the whole picture.

What is your What is your LDL cholesterol? What is your LDL cholesterol? What is your HDL cholesterol, HDL cholesterol, triglycerides, and triglycerides, and non- non- non- HDL cholesterol? And in HDL cholesterol? And in some patients, we some patients, we check check check apoprotein B, apoprotein B, lipoprotein A, even lipoprotein A, even some other cardiovascular markers, cardiovascular markers, because cardiovascular because cardiovascular risk is much risk is much more complex than more complex than saying, "Yes, HDL saying, "Yes, HDL is up, so is up, so everything is fine." Or: “Oh, everything is fine." Or: “Oh, LDL went down. I'm LDL went down. I'm ready for this.

ready for this. Triglycerides are reduced. "Therefore, LDL does not. "Therefore, LDL does not matter." "There's some matter." "There's some chatter going on there." I don't chatter going on there." I don't approach approach approach cardiovascular cardiovascular disease prevention that way. And no disease prevention that way.

Final Advice and Closing Remarks

And no sane sane sane cardiologist would cardiologist would do that. And there are some do that. And there are some people who say and people who say and do whatever they do whatever they want, but they are, as I want, but they are, as I said, I consider to be said, I consider to be false prophets.

false prophets. You shouldn't just You shouldn't just ignore very ignore very high LDL high LDL and apoliposaccharide B (apolysaccharide B) levels apolysaccharide B) levels just because someone just because someone is in ketosis, is in ketosis, okay? Studies are ongoing examining the increases in examining the increases in LDL and LDL and coronary plaque coronary plaque associated with the keto diet, including diet, including studies of the so- studies of the so- called called muscle mass hyperresponsiveness phenotype. These muscle mass hyperresponsiveness phenotype. These studies are studies are scientifically interesting, but scientifically interesting, but they do not yet they do not yet establish that very establish that very high LDL high LDL or apoliposaccharide W levels or apoliposaccharide W levels caused by a caused by a caused by a ketogenic diet are ketogenic diet are harmless. That's an harmless. That's an important distinction, is important distinction, is n't it? Because n't it? Because cardiovascular cardiovascular cardiovascular disease does not disease does not occur overnight occur overnight or over a or over a study period that study period that may last a year or may last a year or two. It usually two. It usually takes years to takes years to see results.

see results. So what would I actually So what would I actually do? If someone do? If someone wants to use a wants to use a low-carb low-carb low-carb or ketogenic or ketogenic approach to treat approach to treat obesity,

obesity, obesity, insulin resistance insulin resistance, prediabetes, or, prediabetes, or fatty fatty fatty liver disease, I'm liver disease, I'm not really saying no, but not really saying no, but I want them to I want them to use a use a use a smarter version smarter version of this keto diet. " of this keto diet. " Make a diet." Make a diet." around real around real food. Use food. Use olive oil, olive oil, avocados, nuts and avocados, nuts and seeds, eat fish and seeds, eat fish and get enough get enough protein. Eat protein. Eat lots of lots of lots of non-starchy non-starchy non-starchy vegetables to vegetables to get your fiber. Don't turn. Don't turn breakfast, lunch, and breakfast, lunch, and dinner into a dinner into a butter and bacon fest. And butter and bacon fest. And then, you know, then, you know, check the check the check the metabolic response, metabolic response, because your body is because your body is getting a boatload. If getting a boatload. If your weight is dropping, your your weight is dropping, your glucose levels glucose levels are improving, your triglyceride levels are improving, your triglyceride levels are improving, your are improving, your liver fat levels are liver fat levels are improving, but your improving, but your LDL and LDL and apolyvinyl bromide levels are apolyvinyl bromide levels are apolyvinyl bromide levels are skyrocketing, we skyrocketing, we shouldn't pretend that the shouldn't pretend that the lab lab lab results don't exist.

results don't exist. Change your diet. Sometimes Change your diet. Sometimes simply replacing simply replacing large amounts of large amounts of saturated fat with saturated fat with monounsaturated and monounsaturated and polyunsaturated polyunsaturated polyunsaturated fats can fats can improve the lipid improve the lipid profile profile profile while maintaining a significant while maintaining a significant portion of portion of carbohydrate restriction. Also carbohydrate restriction. Also remember to remember to avoid avoid avoid seed oils.

seed oils. Seed oils are also not Seed oils are also not suitable for you on the suitable for you on the keto diet. When I keto diet. When I talk about talk about seed oils, I'm not talking seed oils, I'm not talking about cold- about cold- pressed oils. I'm talking about the ones pressed oils. I'm talking about the ones you find on you find on store shelves, store shelves, which, you know, which, you know, are produced under are produced under high high high temperature conditions. What temperature conditions. What about prediabetes? Well about prediabetes? Well, that could be another, that could be another title for this title for this study. After about study. After about 4-6 4-6 4-6 minutes… After 5 minutes… After 5 months, about 50% of the participants in the keto group the participants in the keto group no longer no longer met met met the criteria for the criteria for the criteria for prediabetes. The prediabetes. The Mediterranean Mediterranean Mediterranean and plant-based groups and plant-based groups had had had lower rates, right?

lower rates, right? So, again, So, again, the Mediterranean and the Mediterranean and plant-based groups also plant-based groups also performed well, performed well, but not as well as but not as well as keto. Again, that's keto. Again, that's pretty impressive. But pretty impressive. But be careful with be careful with the wording. This doesn't the wording. This doesn't mean that keto mean that keto has cured has cured diabetes forever. Once these diabetes forever. Once these participants returned participants returned to their to their non-ketogenic diet, non-ketogenic diet, their prediabetes would their prediabetes would immediately return.

immediately return. Now these participants Now these participants had prediabetes rather than had prediabetes rather than established type 2 diabetes established type 2 diabetes. And this was a. And this was a relatively small, relatively small, short-term short-term short-term study, so you study, so you have to keep that in mind have to keep that in mind. If someone. If someone returns to the returns to the lifestyle that, lifestyle that, as I said, as I said, initially led to initially led to metabolic metabolic metabolic dysfunction, the problem dysfunction, the problem may return.

may return. Metabolic health is not a diploma that you is not a diploma that you get, right, get, right, and hang on the wall. You and hang on the wall. You must must must support him. The support him. The most important lesson most important lesson here is that I think this think this study is study is study is actually teaching us: actually teaching us: calories calories calories matter, weight loss matter, weight loss matters, but matters, but macronutrient composition macronutrient composition can also can also matter. All three matter. All three diets yielded approximately diets yielded approximately 10% weight loss. All 10% weight loss. All three improved three improved metabolic health. The metabolic health. The ketogenic diet ketogenic diet led to a much led to a much greater reduction greater reduction in liver fat in in liver fat in this study, and this study, and this is noteworthy this is noteworthy. However, there. However, there were only 42 people were only 42 people who were observed who

were observed during the during the during the controlled controlled controlled intervention, which lasted intervention, which lasted approximately 4 to 5 approximately 4 to 5 months. This is great months. This is great for for for studying the physiology of studying the physiology of metabolism. This is by no means metabolism. This is by no means enough to enough to tell us that everyone tell us that everyone should eat should eat keto all the time. And it keto all the time. And it definitely doesn't prove that definitely doesn't prove that keto prevents keto prevents heart attacks or heart attacks or extends extends extends lifespan.

lifespan. lifespan. Nutrition science becomes Nutrition science becomes dangerous when we dangerous when we take an interesting take an interesting short-term short-term short-term metabolic metabolic metabolic discovery and discovery and turn it into a turn it into a universal universal universal lifelong prescription. So, what is my conclusion?

, what is my conclusion? If you have obesity, If you have obesity, insulin resistance insulin resistance, prediabetes, or, prediabetes, or fatty fatty fatty liver disease, liver disease, carbohydrate restriction can be a carbohydrate restriction can be a very powerful very powerful tool. For tool. For some people, a some people, a ketogenic diet ketogenic diet can lead to can lead to significant improvements.

significant improvements. But the goal is not to But the goal is not to win at win at keto. The goal is to keto. The goal is to improve improve improve your health. If your your health. If your liver fat liver fat is reduced, your is reduced, your waistline is reduced, your waistline is reduced, your glucose levels glucose levels are improved, your triglyceride levels are are improved, your triglyceride levels are improved, and your diet improved, and your diet is consistent, it makes sense, is consistent, it makes sense, right? That makes sense.

right? That makes sense. But if your But if your LDL or apoB levels are LDL or apoB levels are rising sharply, don't ignore rising sharply, don't ignore it because of someone on it because of someone on social media. I social media. I said that said that cholesterol levels don't cholesterol levels don't matter when you're in matter when you're in ketosis. Look at ketosis. Look at the patient as a whole, the patient as a whole, right? That's the right? That's the problem. As a patient, problem. As a patient, you are different from you are different from your wife, your your wife, your husband, even from husband, even from people with the same people with the same genetics. You… You are genetics. You… You are different. So listening to different. So listening to someone online and someone online and expecting what expecting what they say they say applies to everyone is applies to everyone is a bit naive. And I would a bit naive. And I would also recommend also recommend looking at the whole looking at the whole metabolic picture, metabolic picture, because the best because the best diet is not the diet with the diet is not the diet with the coolest name.

coolest name. This is the diet that This is the diet that provides the best provides the best overall overall overall health profile, and one that you health profile, and one that you can actually can actually maintain. This is an maintain. This is an important distinction.

important distinction. I am Dr. Ahmet Ergin, I am Dr. Ahmet Ergin, an endocrinologist. If you an endocrinologist. If you find this useful, find this useful, please please please subscribe to the channel subscribe to the channel and comment and comment below. And please below. And please leave your leave your comments with respect comments with respect for the community. Have you ever tried ever tried keto? Let us know. And keto? Let us know. And that's what I really want to that's what I really want to know. What happened to know. What happened to your cholesterol?

your cholesterol? What happened to your What happened to your fatty fatty fatty liver disease? Thank you. I'll liver disease? Thank you. I'll talk to you in the talk to you in the