



**The Good Clean Nutrition Podcast
Episode 10 Transcript**

Episode 10: Fact vs Fiction: Unraveling the Keto Diet with Jacob Mey, PhD, RD

Dr. Jacob Mey:

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Welcome to The Good Clean Nutrition Podcast, where we speak with credentialed experts about the hottest trending topics in health and nutrition. I'm your host, Mary Purdy, integrative dietitian and nutrition educator. And we're happy to have you join us today.

So, the idea of burning fat by eating more is kind of enticing for a lot of people, and possibly why the keto diet has continued to rise in popularity, especially over the last few years. While keto has been a trending topic in books and on social media, there are a lot of myths floating around, and truths that need to be heard by those who are either considering a keto diet, already following one, or are simply intrigued by the concept.

To speak more about the science behind the keto diet, we are joined today by Dr. Jacob Mey. Dr. Mey is a registered dietitian who earned his PhD in kinesiology, nutrition, and rehabilitation sciences. He is currently a post-doctoral research fellow at Pennington Biomedical Research Center, where his clinical research interests include skeletal muscle metabolism, ketogenesis, and clinical malnutrition. In addition to his full-time commitment to research, Dr. Mey volunteers for the Academy of Nutrition and Dietetics and runs a podcast series for the Healthy Aging Dietetic Practice Group. Welcome, Dr. Mey. Thank you so much for joining us today.

Dr. Jacob Mey:

Thank you for having me. Hello, and hello, everyone listening.

Mary Purdy:

Well, to start, it would be great to learn about the Pennington Biomedical Research Center, which I hear is like the Disney Park for nutrition researchers. Any exciting or interesting research projects that you're working on right now?

Dr. Jacob Mey:

Oh my gosh, Pennington is absolutely outstanding. We really do need to get more people to know about Pennington. They are one of the premier leaders in nutrition research, especially in the United States. We're located in Baton Rouge, Louisiana, but we have just such amazing facilities to do nutrition research, everywhere from like the cell culture end, so growing tissue cells in petri dishes, and maybe seeing how nutritional factors impact them, to doing human clinical research. We have some of the best facilities in the world, where we have what's called metabolic chambers. And so, these are actually full



rooms that people can live in, and you measure everything going in and out of that chamber, including their breath, so you can get intricate measures of metabolism, you know exactly how many calories are going in, exactly how many calories are going out. It's really amazing.

Mary Purdy:
Wow.

Dr. Jacob Mey:
We also do... I won't get too deep into this, but these methods are called hyper insulinemic-euglycemic clamps. Don't worry about that, but essentially, what we can do is we can address diabetes and issues with blood sugar on a totally different level. We lay people down in hospital beds, and we actually infuse into them sugar and insulin, and we see how their body responds. You just get a really intricate understanding of that.

And so, we have cell culture, we have human clinical, and then we have population sciences, where we actually try and translate all these research findings that we have and disseminate it out into the public. There's just some really outstanding work from the researchers there. They're looking at educating MDs to deliver nutrition information and improve health that way, too. It's really the full gambit of nutrition research at this facility, and they have everything you want, if you have a nutrition-related research question.

Mary Purdy:
Holy moly, that sounds like a researcher's dream, a nutritionist's dream, a doctor's dream, incredible. And that insulinemia hyperbolic chamber sounds like a Gilbert and Sullivan lyric, or something like that, incredible. Great to know about. And you're a fellow podcast host for the Healthy Aging Dietetic Practice Group. And I also noticed that a lot of your research is in the area of longevity, which I appreciate, because I would like to live to be at least 100. So, what sparked your interest in the areas of healthy aging and longevity?

Dr. Jacob Mey:
Yeah, my actual movement into that kind of realm was really more from the volunteer end. It was really the Healthy Aging Dietetic Practice Group that drew me in there. My research interests are really targeted at skeletal muscle metabolism, ketogenesis, and otherwise, but there's something special about that particular practice group, and just how all the volunteers just really want to improve the dietetic profession.

I started working with them, and just started volunteering and moving forward with them. And so that's how I kind of got interested in aging, was in... I got interested in aging, and then started volunteering with that group. That group kind of drew me in and got me interested in aging, which was really cool. And so, I don't do a lot of the personal hands-on research with longevity, but I'm sure you've seen maybe the publication on calorie restriction and increasing lifespan. And so, it's just a really interesting area. And certainly, this has been an area of interest for researchers dating back, all the way back to the Fountain of Youth. That was always kind of the goal, how do we live forever? That's just kind of the overarching interest, is what's going on there from a more practical perspective?



I think with all the advances we have from medical approaches, nutrition, and otherwise, people are living longer. Understanding better ways to improve the quality of life of older individuals is just of growing importance. And so that's something I'm particularly passionate about.

Mary Purdy:

Yeah, so much fun to be 98 years old, if you're not healthy and living with a sense of vitality so I appreciate that for sure. And speaking of this longevity, you also presented a webinar as part of Orgain's Professional Education Webinar Series, titled Calorie Restriction, Longevity and Muscle Function: Emerging Research and Clinical Considerations, which sounds fascinating. Fountain of Youth embodied right there. Can you share just a couple of top-level highlights from that webinar?

Dr. Jacob Mey:

Yeah. I'll just maybe give a snippet of what we talked about, is calorie restriction is turning out to be one of the only ways that we're seeing we can improve the lifespan of different organisms. And now, we've actually done randomized clinical trials at Pennington using calorie restriction as ways to address parts of the aging process. Aging has all sorts of intrinsic and extrinsic factors. And in humans, the only one that seems to be able to impact those intrinsic aging factors is calorie restriction, a really, really cool stuff. Your body just adapts and kind of changes, and slows that aging process, or at least the data really suggests that it does right now.

On the counterpoint of that, and this is more towards my interest in muscle, is when you restrict calories, you're inherently going to lose body mass. A lot of that will be fat, but some of that will be muscle. And in older adults, mobility, you need your muscles to move around, is one of the most important factors to quality of life. So where is that balance between improving the lifespan and slowing aging, versus also making sure you have enough strength and mobility? What they're showing so far is that the calorie restriction, although it reduces muscle mass, it may maintain muscle function. It's a really exciting area for calorie restriction and healthy aging right now.

Mary Purdy:

I might need to take a trip to Baton Rouge and get myself into one of those chambers over there. And you could find his full webinar, listeners, available for one CPEU on healthcare.orgain.com, or in the show notes for this episode. Dr. Mey, before we dive into the facts and the myths about the ketogenic diet, it would be great if you could just touch on, what is the ketogenic diet? What does it entail? And how does it work from a nutritional standpoint?

Dr. Jacob Mey:

Absolutely. The ketogenic diet has been around for a long time. I mean, there have been reports dating back, I mean, really, to the earlier 1900s of using a sort of ketogenic diet approach to address various health issues. And a ketogenic diet is, in its most basic sense, a reduction or really minimization of dietary carbohydrates, and replacing those calories with dietary fats. And then what this does is this excess of fats and small amount of carbohydrates causes the body to look for different fuel sources. And one of the ways it does that is by elevating ketones. You don't really eat ketones, your body has to make them. So it's really, in its most basic sense, a shift in exogenous input, a shift in your diet coming into



your body; low carbs, high fat, and then also a shift in the fuels that your body is using, changing from carbohydrates and fats to ketones and fats internally.

And so that's kind of just the basic concept behind it. And what we're finding is that this change has a physiologic impact on the body that may impact other important measures that we're interested in today, weight, metabolic disease, other items.

Mary Purdy:

And it's interesting because people have followed this for a variety of different reasons, but it originally, when it was created, was focused on a much, much different component of health. Can you talk a little bit about the roots of the ketogenic diet, and then why you think it actually went mainstream?

Dr. Jacob Mey:

Yeah, you know I think, clinically, really, the first major reports were really in epilepsy, individuals that are struggling with having seizures. And before we had medications for it, the ketogenic diet was used as a potential approach to really reduce the quantity of seizures or the frequency of seizures that people were having.

Move forward to today, and you have really just outstanding improvements in pharmacology and the approaches we have to epilepsy now. So, it's not really sort of a frontline therapy anymore, but it still is something that is used for people that are not responsive to the medications we have so there is that core clinical utilization in that sort of niche disease case scenario.

Mary Purdy:

Say more about that, because I know a lot of people follow the keto diet for weight loss, but there are many other specific disease states or medical issues that may be benefited from following keto diet.

Dr. Jacob Mey:

Yeah, it's really interesting. You're right. I think the main draw that people see from it is when it's pushed as a weight loss approach. There's a lot of debate as to whether or not the ketogenic diet itself is changing physiology to help people with weight loss, or if maybe having an easier kind of yes/no approach to foods is something that is helping people's behavior and leading to weight loss. I'd say there's really still a big debate in the field as to the impact that the ketogenic diet has and what's causing it. It's an area we still need to know a lot more about, and there's certainly research realms on both ends of the fence.

In terms of other areas of health, I think the biggest one is really metabolic disease and people that have issues with controlling their blood sugar, and diabetes would be in that realm. And one of the reasons for that is inherent to a core concept of the ketogenic diet, which is minimizing dietary exogenous carbohydrates. If you're not eating a lot of carbohydrates, it's really difficult for your body to have high levels of blood sugar. There's certainly, physiologic processes within that can cause that, but that's one of the primary non-weight-loss-related reasons people look into it, is to have better control of their blood sugar levels.



Now, for any individual, I want to make sure I'm clear. I'm not just saying, anyone with blood sugar issues would benefit from the ketogenic diet, because there are other downsides that perhaps we'll get into, like, you do have higher amounts of dietary fat, and otherwise, that may have a negative impact on items like cardiovascular health so certainly, it's a balance between all these different items, but I'd say, just from what many people see out there as the advertisements for weight loss, the advertisements for blood sugar control, or I think it's kind of pitched now as Type 2 diabetes prevention, or you might see some targeted advertisements, like a diabetes cure, which I know you guys can't see me, but I put that up in quotes, because I want to be very clear, I don't want to necessarily pitch it as such.

Mary Purdy:

Absolutely. I appreciate that, too. And essentially, what you're saying is that there's a potential for the keto diet to be sort of like a metabolic reset to help with how our metabolic function operates, and to improve upon that, especially for those who have blood sugar issues, but maybe other cardiovascular issues as well.

And I want to understand if there are different permutations of ketogenic diets, or someone might just follow one for a few months or part of the year, and maybe cycle in and out of it. Talk about the short-term variations of following keto.

Dr. Jacob Mey:

Absolutely. And this is one of my really big concerns with a kind of mass use of the ketogenic diet, is differences between maybe a public-generated or lay-generated ketogenic diet versus the ketogenic diets we use in the research studies, where we have defined benefits of using it. And so in my mind, those diets are very different. Yeah, it would be great to kind of look at how these two different approaches look.

And so, the first one I'll start with is really just the average ketogenic diet. When someone just hears, "Hey, try the keto diet, low-carb, high-fat, go," you tend to see a lot of red meats, a lot of cheeses, really high amounts of dietary saturated fat, almost no fruits, often, very little vegetables. And if you contrast that with the research-grade ketogenic diets that are used in research studies, we see, for fats, you know instead of excessive red meats, what we see is fish. We see avocados, we see olive oil, we see a focus on nuts, so you really change the profile of fats that are coming in.

Beyond that, the majority of research-grade ketogenic diets use a significant amount of both fruits and vegetables. We're talking fruits that are lower on the glycemic index. You are keeping your carbohydrates smaller, but those items are built into the research-grade diets, thinking something like a half cup of berries with your breakfast.

And so, these are items that are large contrast between what we see, if you just look at maybe the average person doing the ketogenic diet on their own, versus someone doing the ketogenic diet with a registered dietitian, or as part of the research study. And it's that contrast that I think might have a huge impact on the downstream health effects, but we really just don't know, because no one's done that comparison.



Mary Purdy:

Right, and it's so important to talk about the content of this diets I'm really glad that you brought that up. And I want to get deeper into this. I actually want to try and understand the percentages that are out there. I think the basic numbers that we hear on a general basis is, around 80% of your calories come from fat, around 10 to 15% come from protein, and around five to maybe 10% come from carbohydrates. Is that the typical distribution?

Dr. Jacob Mey:

Yeah, that's right in the range. I would push people to consider a little higher protein dose. I think the more and more we learn, and this is my bias as a muscle guy, protein is one of those main regulators of your muscle mass with training, or otherwise, and other factors so I am a big proponent of pushing that protein level up to 20%, or maybe pushing towards 25. I mean, even reducing little dietary fat because of it. The main thrust of the ketogenesis or the increase in ketones that comes from the ketogenic diet is really from that reduction in carbohydrates. And so, I'm a big fan of pushing towards that realm, but I think your general range percentages are right on.

Mary Purdy:

Okay. And then so in terms of fat, you mentioned already, trying to maybe be a little bit mindful about some of the more high-saturated sources of fat, like the meats, and red meats, and the bacon, and things like that. But you mentioned things like fish, avocado, avocado oils, perhaps, the nuts, the seeds, the olives, the olive oils, are those the types of things that would be included in that fat realm in terms of trying to maintain health benefits, and not overtax the body with an excessive amount of saturated fat?

Dr. Jacob Mey:

Absolutely. I think anything you can do to increase that percentage of mono and polyunsaturated fats is going to be a benefit when consuming the ketogenic diet. And this is just based on what we know about different ratios of saturated fat, monounsaturated fats, polyunsaturated fats. I don't like to label things healthy or unhealthy, or good or bad necessarily. You're going to have more saturated fat on a ketogenic diet. And what we're seeing in the research studies is that doesn't seem to be inherently bad when there're those research-grade ketogenic diets coming along with the fruits, the vegetables, the healthy fats, again, just kind of putting a coined term on it as healthy fat, but your mono and polyunsaturated fats as well.

Mary Purdy:

Yeah, and I think we're not saying that saturated fats are bad necessarily, of course, we're saying that in excess, especially for certain people, that can be bad. I worked at an organization where we had people who were on the keto diet as patients, and we really saw a genetic difference, where people were adopting a ketogenic diet, and some of their blood markers went way off the charts; inflammation, cholesterol, triglycerides, just, it was not a good model of a diet for them. And then others who were adopting the same diet, who knows what the content of that diet was, but they actually saw their markers go down so it was really interesting to see the variation, which must be related, of course, to content of diet, but also to the genetics.



Dr. Jacob Mey:

Absolutely. And this is what we're trying to move towards as a nutrition field in general, is this precision nutrition approach, or if you're not familiar with the buzzword precision nutrition, again, just speaking to the general audience, that's like personalized nutrition therapy to get the goals that you're looking for, and it... you and someone else may have the same exact goal, and you could use different diets to get there, or different versions of the diet to get there and that's what's so cool about the future of nutrition research right now.

Mary Purdy:

For sure. And I have question about ketones and fat. How do ketones get formed from fat? Take us through that.

Dr. Jacob Mey:

Yeah, essentially, in the most basic sense, your body is going to use carbohydrates and fats for energy. Right and so, you limit carbohydrates, and then you have higher amounts of fats. And what the liver can do when there's these extra fats around that you really aren't using at that given time, is it converts it into ketones. And what's special about the liver is, the liver is going to make those ketones, but it's not going to use it right there. Instead, what it's going to do is, it's going to push it out into circulation. And so then those ketones can take that energy, originally coming from the fats, transfers it into ketones, and then circulates that around the body so that your different tissues can then use ketones as energy. That's kind of a special thing that happens in the liver.

If you're reading some of the science articles, we might call this hepatic ketogenesis. If you're just reading more of a lay-based article, it might just be termed ketogenesis, or you'll hear the term ketosis. It all kind of means the same things, where your body is taking this energy, primarily from lipids in the liver, and then converting it to ketones, and then sending that out to the rest of the body.

Mary Purdy:

And how do we know we're in ketosis? I know people do some urine testing or testing your ketone bodies. What's the typical layperson able to do?

Dr. Jacob Mey:

This is such a great question, because you'll see ketosis defined differently, depending on where you're looking at. If you just do a scan of the literature, you'll have papers that define it as .5 millimolar of ketones in the blood. Others will define it as 1.0. Others, 1.5. And so, where do you... Where is the actual cutoff? What really is ketosis? I think when I think about it, I think about, do I have more ketones than the average person on more of a high carbohydrate diet? And what does that look like?

In the fasted state, I'd say the average person is probably somewhere around .2, .25 millimolars of ketones. If you prolong your fasting, that tends to just kind of raise up until it gets higher and higher, but then you eat a meal, and it reduces so it's kind of the opposite. If you don't eat, ketones go up, and if you eat, ketones go down. The average person walking around has really minimal levels of ketones.



What I would consider ketosis is consuming a diet where your levels are... Instead of going below that average realm of the .25 millimolar, you're above that and maybe .5 millimolar is a good cutoff, maybe 1.5 is, but I think all of those are having larger rates of ketosis than kind of the average person.

Mary Purdy:

Now, I, as much as anyone, love a good conversation about millimoles, but Dr. Mey, would you help us translate into real-world talk how to test ketosis?

Dr. Jacob Mey:

Sure, so there's a couple ways to do it. If you use the blood test, which are now much more widely available than they were previously, you can purchase them from your CVS, if it's available. Just like you could purchase a blood glucose monitor, you can get a blood keto monitor. And they'll pop it out right in millimolars for you.

But if you're not into that, don't worry, there are what we call urine dipsticks as well. You can buy a little tube with some filaments of paper in it, and throughout the day, you just put a little bit of your urine on there, and it'll actually tell you how much of the ketones are showing up in your urine. And that's a reasonable indicator of what's going on in terms of your body and your blood as well. So, there's not really a great level. These sort of urine dipsticks aren't super accurate, but what you can do is you can get those and test them before you do the ketogenic diet and see what it looks like.

And then test them on the days after you're doing the ketogenic diet, try it early on, try it later. And what it'll give you is just kind of a color switch, and it'll show you, "Okay, this is what it looks like if you don't have any ketones in your blood, and then this is the color it'll be as your ketones are going up." So, you can use that as kind of a rough indicator, but I would also say that for the average person that's not necessarily doing the ketogenic diet for a clinical purpose, I'm not positive that focusing on your level of ketogenesis is going to be that impactful on the health results that you're getting.

I would say, if you're interested in you doing the blood keto monitors or the urine keto monitors, I think that's a great addition to help keep you on track and know where your body's at, but in terms of the overall physiology, I think most people can just look at their diet, and consume the ketogenic diet, and understand that it is likely that they're in ketogenesis, if they're limiting their carbohydrates and keeping their fats higher.

Mary Purdy:

One quick question about brain function and the keto diet, since we know that the beginnings of the keto diet were aimed at helping with epilepsy, what other benefits might this diet have on brain function?

Dr. Jacob Mey:

Oh my gosh. It is such an emerging area of research. That's so exciting. From my end, I played collegiate football. And so, there's studies looking at the impact of CTE, or, boy, I'm going to mess the word up, chronic traumatic encephalopathy. I'm sure that's wrong, but it's the issues that they're seeing in football players. It's this hitting of the head and getting the brain damaged because of it downstream.



And so, there's research in that realm. There's research in the realm of Alzheimer's and dementia, or we call that Type 3 diabetes. You could kind of see that transition there. Boy, I don't know if there's anything concrete just yet, but it is an exciting area of research for sure.

Mary Purdy:

Emerging evidence is always fascinating to talk about. What about the keto diet for cancer diagnoses? I know that it can be used for things like glioblastoma. I work with a patient with the keto diet on that. What are the recommendations around that? And has it been shown to be effective?

Dr. Jacob Mey:

Man, another great area, where I would call it that emerging research, more emerging evidence, because the potential for the ketogenic diet to improve outcomes with cancer therapy or downstream with remission is interesting. Most of our work right now is really focused on cell culture or animal models. I do want to be cautious about trying to translate that right to the human realm, but I think that there's a lot of potential out there, and it's certainly something to consider.

Another area of caution, though, that I would highly stress to anyone considering the use of the ketogenic diet in the cancer realm is understanding that it's always going to be used in concert with our best pharmacological approaches to cancer treatment. I think sometimes, especially with the ketogenic diet, to me, things get a little scary when you see advertisements on the internet filled with misinformation. And that's a big concern with the ketogenic diet right now, is so much misinformation out there. So, I would say for anyone interested, I would say it's an emerging area of research. It's quite interesting. I'd imagine there are some people that would benefit from it, but it's always going to come from a realm of working within the medical profession.

Mary Purdy:

Okay, we've covered fat. I want to get to carbohydrates, because as dietitians, we are always looking to get more fiber into our patient's diet. We know the benefits, nutritional benefits, health benefits of fiber in the diet. And so, how does someone on a 5% of their calories diet, or 5%, or 10% of their calories diet coming from carbs, how do they get enough fiber to feed their gut microbiome, to help with cholesterol levels? What do you suggest around that?

Dr. Jacob Mey:

Yeah, and that's a great question, too. I think one of the types of fibers that I think is really important are the soluble fibers that you would get in something like oatmeal, which is certainly more of a higher carbohydrate item. It does get a little more difficult. I mean, certainly, your fruits and your vegetables are great. I think it is something that each individual person kind of needs to balance on their own in terms of the importance that fiber has in their diet, and whether or not they're willing to potentially reduce ketosis a little bit to be able to consume these other forms of carbohydrates that we know have beneficial effects. So, I think it really depends on the person.

To give sort of an example, someone using the ketogenic diet for epilepsy is really dependent on having high levels of ketones in their body to be able to counteract the epileptic effect, right so they might not be willing to sacrifice high levels of ketogenesis for consuming different forms of dietary fiber or



increased carbohydrates for all the benefits you just mentioned, whereas someone consuming the ketogenic diet for weight loss purposes might not be as dependent on the ketogenic diet in terms of higher levels, we don't have great evidence that would suggest high levels of ketones just lead to weight loss in themselves. If you reduce that rate of ketogenesis, can you then implement and liberalize the carbohydrate sources in your diet? And so, I think that's really important to take from an individual level, and say, "What am I using the ketogenic diet for, and what parts of it are most important for me and my results?"

Mary Purdy:

Excellent. Once again, personalized nutrition or precision nutrition is key here. So that's a bit about the carbohydrates. And I also want to mention, you talked about vegetables, and how important, obviously, we know they are for their phytochemical content, for all the different vitamins and minerals, and antioxidant potential they offer. How do you suggest people get sufficient vegetables in their diet, so they have access to all of those incredibly protective nutrients?

Dr. Jacob Mey:

Another great question. I'm so happy you mentioned phytochemicals. So, I maybe didn't share this with you all, but I think it's cool. At Pennington, I was part of what's called a T32 training program. It's a federally funded grant to train individuals that are younger in their research career, like myself. And what program that was, was botanical approaches to combat metabolic syndrome.

It's a little funny, I am in here talking about the ketogenic diet, but my research for that training was actually looking at phytochemical components of whole grains that have potential benefits on whole-body or skeletal muscle health. So, it's this really interesting dynamic. And I find it very fun to be able to be on maybe what you would call both sides of the coin, looking at benefits of these carbohydrate-based foods, but also looking at benefits of the ketogenic diet, and maybe finding ways to merge them so just a quick sidebar on that, because I find it interesting.

In terms of vegetables, I think, honestly, the core MyPlate recommendations that we have for meal-by-meal intake, I think can be applied to the ketogenic diet. I think you can do that sort of transition. You'll be substituting certain items, right for example. And if people aren't familiar with MyPlate, you essentially just sit back, and you envision, "Anytime I eat a meal, what should my plate of food look like?" Can you just envision your food being a circular plate?

And the classic MyPlate is, "Okay, you have half of your plate be made of fruits and vegetables, a quarter of your plate grains, and a quarter of your plate protein." And if you are interested in the ketogenic diet, I think you can really do a very similar approach, just substituting those grains for maybe more of your healthy fat items, or serving of seeds or nuts, or otherwise.

But I think, just looking at every meal and saying, "Where are my vegetables coming from?" If it's maybe one meal a day, "Where are my fruits coming from?" But finding a way to, with every meal, incorporate those sort of items into each meal, that's the easiest way to keep it going and keep that intake high.



Mary Purdy:

Keep that color on the plate. Let's talk about protein, because we've covered our carbs, our fats, and protein is key here. You started talking a little bit about... Obviously, there's a crossover between fat and protein with meats and fish, and things like that, but how do we have people meet their protein needs without necessarily going over some of those saturated fat recommendations, and maybe focusing on more plant-based options? What's out there?

Dr. Jacob Mey:

Yeah, and this is something where there's becoming so many more great options to be able to get protein into your diet. I think it's easier than ever for someone, no matter what diet they're on, to consume adequate protein. And I hope I'm not stepping out of line. We have dietary recommendations. We have the RDA of protein intake, which is set at about .8 grams per kilogram. I forget what that is in pounds per person for you guys. It's probably about half a gram of protein per pound of body weight, somewhere in that range, right?

Mary Purdy:

Right. Uh-huh.

Dr. Jacob Mey:

It's relatively on the low-end, but this is our large core guideline that we have. I think there's enough evidence out there now to suggest, especially for the aging realm, where I'm quite interested in, consuming higher amounts of protein can be beneficial. So, I think you can get to increasing that by like 50% above the guidelines, I think should be a goal for many people. And to be able to do that, you have to find ways to add protein into your diet. I think nowadays, I mean, my gosh, we have so many great ways to do it. From ketogenic foods in particular, you could focus on looking more at your eggs, along with your meats and fish, and otherwise. You could look at incorporating items like seeds and nuts into your dishes, if you're cooking a certain dish.

And so, there's ways to add protein and maintain that ketogenic diet approach. And then, honestly, I mean, supplements are a really great way these days, just to be able to increase your dietary intake of proteins without creating maybe too much of a stress. If you have a hard time cooking three meals, if you can only cook one or two, it's an easy way to get a high-quality protein source. And so, I'm a big fan of dietary supplements as well.

Mary Purdy:

And I also know that tofu, which is a plant-based protein has very little carbohydrates as well. For those who are looking for more plant-based options, that's another opportunity to get that in there, and get more of those phytochemicals in there, too.

And you mentioned supplements, what do you think about some of the keto protein powders that are out there? And I have to say, I've been seeing some cricket protein powders out there as well. I'm curious about your thoughts about those, and the collagen protein powders, too.



Dr. Jacob Mey:

Yeah, there's so many different sources now. I think, really, to me, what's more important is looking at supplement safety. I think you can find a lot of really similar products from a variety of areas but focusing on companies you trust and brands you trust to know that the supplement is safe, because they're not regulated. Right, that's the concern, is that a lot of dietary supplements aren't.

And so, when you have these companies that are very trustworthy, like Orgain, when you have products that are used even on a clinical scale, having something like that behind the supplement you're using, to me, is more important than focusing on different minutiae within any particular supplement.

Mary Purdy:

So, let's say that someone's interested in trying out this keto diet, Dr. Mey, and I'm curious, what might a typical day of meals, or just even a meal look like that covers our bases; healthy fats, adequate protein, a little bit of carbs, some phytochemicals, and of course, flavor? That's key as well for maintaining a good diet.

Dr. Jacob Mey:

Oh gosh. Boy, there's so many different options. I'm a big fan of watching celebrity chef cooking. I would recommend people look into different recipes that are out there and tweak them just a bit to transform them into ketogenic diet approaches, because you're right, flavor plays such a huge role in our diet. And really maintaining a diet for a long period of time, you have to enjoy what you're eating.

But yeah, you know, it's really... It's a transformation of, if we go with breakfast, something from a grain-based breakfast, which is very common, whether it's toast or cereals, or otherwise, and transitioning that over to something like an omelet, and you can mix your spinach and other items in there. I'm a big fan of mushrooms, so I always like to throw those in there. You can mix those items in. It's maybe having some Greek yogurt with a half cup of berries mixed in and getting your protein and your fats from the dairy. You can focus on maybe having not non-fat dairy, which is really quite common nowadays. You can focus more towards those 2%, or full-fat dairy products. That's just kind of a simple transition to make from sort of a high carbohydrate meal to a lower carbohydrate, higher fat meal.

Mary Purdy:

Thank you. And anytime mushrooms are involved, I'm coming over for breakfast for sure. And what about side effects? Anything that people should be mindful of? I know that interesting smelling breath is one of the things that might happen for certain individuals.

Dr. Jacob Mey:

Yeah, so ketones in the breath will do that. Actually, it's funny you mentioned the breath. One of the other research areas I do is we measure molecules in the exhale breath. We actually just put a publication out, where we looked at the molecules on the breath, and we saw that there was a difference in individuals that had malnutrition versus not malnutrition. And that just plays back to, I think those new areas of nutrition research, and the breath is really interesting to me, but ketones will do that. So one of the ketones is acetone, and it's a really volatile compound. We can measure it in the breath, but it's presently in really small levels in the body because it's so volatile. It'll come out and you



can breathe it, and that is a scent that you could have. It's a little fruity, but that is something that could happen. Whether many people consider that necessarily a side effect, I don't know. Grab your mints, grab your chewing gum, you might be okay.

But on the other end, there are more serious items. You have risks of hypoglycemia or low blood sugar. And this is a particular concern for individuals that have issues with their blood sugar and are on medications for that. And so, certainly, I would highly recommend anyone discuss with their physician, or... I'm a big fan of dietitians, being one. I know, Mary, you are as well. Consulting with the dietitian to be able to implement a sort of good ketogenic diet approach in the safest manner possible.

For the average person, is it a concern? Not likely. Some people report what they call the keto flu, or just feelings of a little bit of illness when your body is transitioning from utilizing carbohydrates to utilizing ketones. And I believe some of that is whittled down to maybe salt imbalances, but that's a little beyond my purview but those are kind of the main, what I would call side effects that are out there, most mild, some moderate, with like keto flu, and then the concerning ones are really for individuals that have more medical-specific needs.

Mary Purdy:

So, it's good to know that the keto diet is not appropriate for every single person out there, no matter what your metabolic issues are, and that it's really key to work with a practitioner to help you make sure that it's appropriate for your condition. And I did have a patient who was on the keto diet, and what they found was they had this real surge of energy, like just huge amount of energy, and what they felt like was clear-headedness.

And as we broke it down, we actually found out that they were struggling with hypoglycemia, and they were actually dipping way down. They perceive it as being this like, "Whoa, I feel so clear-headed," but they were actually really running on adrenaline. It's really key to mention those side effects, or mention those potential presentations of signs and symptoms that may be indicating that the keto diet is not working for you, or that maybe you're not doing it in the way that's best for your body.

Dr. Jacob Mey:

Absolutely.

Mary Purdy:

And what do you think is the biggest struggle for those who are starting to follow a keto diet?

Dr. Jacob Mey:

I think it's the same as with any other diet, it's the ability to create certain structure and restrictions to modify your diet a certain way. With a ketogenic diet, it's a little easier to understand that there may be other diets out there, because the ketogenic diet is, "Okay, I cut my carbohydrates. That's the restriction.

But sometimes that becomes difficult for people, whether it's taste preferences, whether it's gatherings with family, or friends, or just the general food environment we're in, makes it pretty difficult to maintain that, but that's the same for any diet. If you had someone trying to change their diet to a



Mediterranean-based diet, and let's say, they're working on consuming fish three times a week, you have the same sort of struggle, where it's like, "Okay, can I build this structure and restriction into my life, and maintain that, long-term?" So, you know I think the potential downsides are, what you would say, struggles with maintaining the ketogenic diet are actually very similar to really almost every diet approach out there.

Mary Purdy:

Hmm. And if somebody is looking to start this diet, before we sign off here, Dr. Mey, what's one thing that that person might consider or keep in mind, just to set them up for success?

Dr. Jacob Mey:

Let's see. Number one, I would say... I use this phrase occasionally, modify your mindset. And it's this difference in thinking of these sort of diets as a short-term approach to just weight loss and thinking about that on a different scale. If someone's jumping on this, and let's just use weight loss as an example, if someone's jumping on this for weight loss, I think it's really easy to look in terms of checking up the scale every day, and "Am I improving?" Or are you not? Versus thinking, "What's my goal in a year? How do I want to adjust my weight through diet in a year? What about three years? And what about five years?" And when you place your mindset on that longer scale, it makes it easier for you to implement these smaller day-to-day goals and changes with the understanding that you don't necessarily have to see a reduction in body weight every day. And so, planning, long-term, I think is a big item that will help people.

And then the other one, I use the phrase enlist an expert. I would always work with someone. And certainly, I'm a dietitian, if people think this may be a little biased coming from me, but dietitians are critical in terms of long-term adherence to diet regimens, no matter what they are, ketogenic diet, or otherwise. And so, I think having an expert on your team to help you with both the day-to-day and the long-term goals is just one of the best ways that you can really optimize your chances of success using a ketogenic diet for whatever your goal is. Having an expert that just knows food in and out, knows the physiology in and out is just an outstanding approach.

Mary Purdy:

So, realistic goals, modify your mindset, and enlist an expert. I think we could probably all use that advice in some area of our lives in general. Thank you so much, Dr. Mey. It's been such a pleasure speaking with you. And your enthusiasm is contagious, and so appreciate your knowledge and expertise today.

Dr. Jacob Mey:

Oh my gosh, Mary, thank you so much for having me on. This was an absolute blast to chat about. I love talking about nutrition like some people are like, "Oh, man, it's your job. Should I ask Jake about this?" Ask me about it. I love it. This is my favorite thing to do.

Mary Purdy:

Well, we are soul siblings on that front, so I'm sure our paths will cross again.



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