Danny Lennon: Hello and welcome to Sigma Nutrition Radio, the podcast that brings you evidence-based discussions with the world's leading researchers and practitioners in fields related to nutrition and performance. I am your host, Danny Lennon, and you are listening to Episode 137. And first up, I'd just like to let you know that my good friends over at Shredded by Science are opening up the doors to their prestigious SBS Academy on August 22nd. From the foundations of coaching through the most intricate details of physique and strength sports taught by Eric Helms and Mike Zourdos to a masterclass in setting up a personal training business, the SBS Academy covers all of that stuff. I highly recommend that you check out their course syllabus and to do so, go over to shreddedbyscience.com/academy. That's shreddedbyscience.com/academy, and I'll also put a link to that in the show notes to this episode.

And on today's podcast, I'm delighted to have Luis Villasenor of Ketogains on to discuss various aspects of ketogenic diets and how they can be successfully and unsuccessfully implemented, and some concerns about using them in the context of muscle building, sport performance and powerlifting. I really enjoy discussing these types of things with Luis online as his approach is extremely balanced and objective. I think often one of the things that leads to people maybe dismissing ketogenic diets altogether is not so much to diet and the approach itself but rather their disdain for the dogmatic and over-the-top promotion of it by certain proponents some of the time, many of whom may even like dismiss the importance of energy balance, for example. Thankfully, Luis is not one of

those and he's really clued into the factors that affect body composition and health when it comes to nutrition. And what I really like is that his whole deal is not trying to tell everyone to use a ketogenic diet; rather, he comes at it from the perspective of, "Okay, if you are interested in using a ketogenic diet, then let me show you how to implement that correctly in a way that'll be beneficial," and I think that's a critical distinction.

The show notes to this episode are going to be over at SigmaNutrition.com/episode137. Also, if you have not already done so, you can sign up to receive the transcripts to each of these podcast episodes, which will be delivered direct to your inbox as a PDF completely for free, and again you can do that up over on the show notes page as well. Now, let's get into this week's episode.

Luis, welcome to the show. How are you doing, my friend?

Luis Villasenor: Hey, hello Danny. Nice to be here. Oh, thanks for having me.

Danny Lennon: Yeah, I'm looking forward to this conversation because as I've mentioned to you previously, I think any of this information that's coming in around the ketogenic diet, I really like the way you put across a lot of that information that is coming from a more I suppose evidence-based perspective, but I think just a more objective and balanced perspective than maybe some people have been accustomed. But before we get into our topic today, maybe just give the listeners some introduction to yourself and then Ketogains and what it's all about.

Luis Villasenor: Sure. Well, I'm Luis Villasenor from Mexico City. I've been following and practically doing ketogenic diet for almost 15 years now. I started doing it in 2001 and I practically started doing a ketogenic diet because I was very fat as a child. I dieted down by the traditional means of doing lots of cardio and eating less, but I never managed to get to the point where I was comfortable. I ended up dieting way too hard and practically became anorexic for a while when I was in college. I currently weigh about 72 kilos and at that time I weighed 48, so you can probably see what I mean.

Danny Lennon: Wow, yeah.

Luis Villasenor: Yeah. At that time, I started researching on the products used by bodybuilders to maintain lean mass and naturally stay lean all year round or what they did for contest preps, so I stumbled upon Body Outpus, which is a book by Dan Duchaine, and then on The Ketogenic Diet by Lyle McDonald, and the process by itself intrigued me because it seemed

very appealing to actually be able to shed body fat in an easy way. I started researching more and more and eventually I founded Ketogains on Reddit, which is basically a protocol, an approach to demythify some of the most common misconceptions on ketogenic diets and that it's not possible to build lean mass on a ketogenic diet without actually carb-loading and etc.

Danny Lennon: Excellent. I think that gives some context for where we're going to be. And I think just so, I'm sure plenty of people listening are familiar with the concept of ketogenic diets and I've looked at it in some detail previously, but just for any of those who maybe are a bit less familiar and so that everyone is starting with the kind of same page here, can you maybe explain to us exactly what that state of ketosis is, and then second to that, how do we go about inducing that nutritionally?

Luis Villasenor: Sure. Well, first we have to define what ketosis is, and normally you will find it on literature as any diet that is sufficiently low in carbohydrates to induce ketosis. Ketosis is a metabolic state where you are burning or using fatty acids as fuel, and then this produces molecules called ketones which most of your organs can use this energy. So if you look at the therapeutic definition of ketosis, you will probably find that it's a diet normally described as 70% of fats, 20 to 25% of protein, and 5% of carbohydrates. That is a therapeutic definition because usually ketosis is used to treat neurological diseases such as epilepsy. But if you apply it to sports or just like for weight loss, we normally say it's a diet that is sufficiently low in carbohydrates to induce ketosis, and that really depends on the person. Some people can get into ketosis with 20 carbs a day, some people with even 50 or 80 grams a day. It really depends on your body mass and your insulin sensitivity and even on the type and duration of sports.

Danny Lennon: Yeah, for sure. And so when it comes to using a ketogenic diet then, where should we start in terms of who should be considering such a diet? So, for example, I think one of the really great things about the Ketogains approach is that you do have a kind of clear hierarchy of the certain elements that will lead to someone being successful with a diet for body composition or for athletic performance, and you take into account for example things like overall energy balance still does matter, but then just showing people how you can do all that within the context of a ketogenic diet. So if we're to assume then that if overall energy balance is the main dictator of that thing, where does the benefit for someone come for any individual that’s considering a ketogenic diet? Who would likely benefit

from using a ketogenic diet rather than, say, a diet that is matched for calories and matched for protein and is just higher in carbohydrate?

Luis Villasenor: Sure. Who would benefit from a ketogenic diet? Practically anyone. It's a very, let's say, useful approach, first because it's not a traditional diet as people think of a low-carb diet. It's not a diet as we define it in Ketogains that one should be eating just butter and bacon. Our approach to ketogenic diet is mostly based on whole foods, and then it's a very universal diet in the sense that you will really not be eating very differently from what someone who is eating clean, let's say, would be eating, save for probably eating a little bit less carbohydrates or starchy carbs or even a little bit less fruit.

So, again, to see who would benefit from this approach, first, anybody who wants to lose body weight or lose body fat in a sensible way and in an easy and manageable approach because doing a ketogenic diet, for one, has one benefit that probably most people will see or experiment, that is, having less hunger because you're eating very nutrient-dense foods and very filling, and also the state of ketosis per se is very satiating – you have a less perceived effect of hunger. So for one, this is a very good approach for mostly everyone.

Then, for some kinds of sports as well, let's say you want to build lean mass without actually having to resort to the classic bulk-and-cut cycles, it is also a sensible approach for people who want to maintain a lean physique all year round, I would also suggest it, and one point is that it may not be good for everyone but, again, it really depends on your insulin sensitivity and the types of sports you are and of course on your diet preferences. If you're someone who leans more toward eating whole foods, likes meat, for example, green veggies, probably it's going to be a very transition for you. On the other side, if you are someone who lives on pasta and rice and starches, it's maybe a little bit more difficult, but really the advice I would give is just try it, inform yourself very well on what a well-established ketogenic diet protocol is, and then decide if it's for you and at least give it one or two weeks, I will say more, before actually deciding if it's not going to work for you.

Danny Lennon: Right. So even if there's potentially not any superior advantage or superiority over a non-ketogenic diet presuming, say someone who's able to match calories and protein, there's a point when it comes to practical application for some people if, for example, hunger is a big issue for them that the appetite-suppressing effects of ketosis could be useful in that way

of just allowing them to maintain the diet better and it just suits their preference better.

Luis Villasenor: Exactly, yeah. As we've seen for example in recent studies including the Hall study that they just published a couple of months ago, there's a little discrepancy in saying that a ketogenic diet has no actual benefits to where the calorie-matched and protein-matched high-carb diet. Yeah, but like you're probably going to be burning the same amount of fat or using the same amount of substrates in general because, as we said, protein is matched, energies, calories are matched, but there is a perceived effect of more satiety, less hunger. So by that alone, it's a small advantage, for some people of course, not for everyone. It really depends on the person. Even more so if you try to pair a ketogenic diet with intermittent fasting, from my personal experience and from lots of people whom I coach, it seems to be very easy or easier if you want to try an intermittent fasting approach to do so with a ketogenic diet. Both go hand in hand very well and it's going be an easier transition just because of the fact on a ketogenic diet because insulin levels are kept stable or low, and then the same happens with intermittent fasting, then you actually get less hungry.

Danny Lennon: Right, yeah. I think you touched on a really important aspect there when we're talking about how much substrate is actually going to get used up, so the actual differences in the energy balance, whether that's coming from more fat oxidation or more carbohydrate oxidation. If energy is getting used up the same, it's probably going to lead to a similar thing. And I think it kind of mirrors something that you've said to me previously around one of the big maybe misconceptions people have with a ketogenic diet when they hear phrases like if you go on a ketogenic diet and you're eating more fat, that means you're going to burn more fat, and so then the kind of next logical step is, "Well, I'll just add in even more fat to the diet," which is kind of counter to what you typically set up people with, right?

Luis Villasenor: Exactly. People think or there's this misconception floating around, for one, that eating more fat makes you burn more fat, and then you have people chasing ketones just for the sake because of having a higher ketone number. It's like a race to see who has a higher ketone reading. And then you look at actually the physique of these persons, and they are not…for one, they don't look healthy, for two, they probably started the diet to lose body weight and they're not achieving that. Probably they lost a little bit when they started the diet because of course they changed energy substrates and when you do this there's a high thermic effect of food, and also there's an inefficiency when changing substrates, so you actually may

burn a little bit more even if you are not really in a calorie deficit, but over time as they stay on a ketogenic diet they start to chase ketones just for the sake of having higher readings because they think they're burning more body fat that way and it really is not so, and then they start having more fat and more fat and become obsessed with it, and you can see their lack of results. So yeah, you don't have to be ingesting a lot of body fat to stay in ketosis and you won't be burning more body fat if you eat more fat. You have to stay within your caloric objectives.

Danny Lennon: Right. So for most people that you're advising, do you even bother to look at, say, ketone measurements or get them to do blood tests or is that for most people probably not really necessary?

Luis Villasenor: I think that for the average folk this is something…it's another layer of complexity that one should not really be doing unless you really like want to measure for, let's say, scientific information or want to test for having the sake of the information. For actual fat loss or for anything else, it's really not necessarily. If you are actually measuring your macros, you are sure you're ingesting less than 30 grams of carbohydrates or some people let's say 20, you will be in a state of ketosis. You will not really be like actually burning more body fat if you have 0.4 millimoles or 0.5 or whatever. Really does not matter that much because it's just like blood glucose – it changes throughout the day depending on what you eat, what you don't eat, if you do sports, if you have fasted for a while. It's not a set number that will stay at the same level during the day. It changes with lots of different outcomes. For example, I have tested myself like different times of the day by doing different things, by eating different types of food, and it changes all throughout the day but I'm still within ketogenic numbers. So what I say is it really doesn't matter. As long as you're eating less than 30 grams of carbohydrates a day, you will be in ketosis. You really don't need to obsess about this unless you have a specific condition that requires, so let's say you want to treat a neurodegenerative disease or want to treat maybe brain cancer or so. But outside of that and even so for sports performance, I really don't suggest it.

Danny Lennon: Yeah, and I think that kind of raises another issue that we've actually talked about before, and like at the start when we were trying to define a ketogenic diet or a state of ketosis, we're really looking at restricting carbohydrates, whereas I think there's a notion going around now particularly with…maybe it's because of the rise of maybe low-carb, high-fat diets that conflating those terms, "ketogenic diets," with having like super-high fat intakes where that's not necessarily the case, right? I mean,

we can even look at the example of a protein-sparing modified fast where there's hardly any fat in the diet. So can you maybe just touch on not only that kind of issue of it doesn't necessarily have to be super-high fat but then, if that's the case, how should people go around setting up macronutrients if they want to go with the kind of style of approach that you use?

Luis Villasenor: Okay, sure. Well, the first thing is I have a thing that I repeat and repeat until people get it, that is, that which is not measured cannot be managed. What this means is people think that, for one, ketogenic diet calories don't count – they do; and then they think that macros don't count as long as they keep their carbohydrates low and protein as well because they need to have a higher fat – it matters, especially for body composition. So what we usually suggest people is if they don't want to…like if they want the easy way, they can go to Ketogains.com and we have a macro calculator in there where you just input your body weight, your fat percentage, and it mostly does everything for you, but what it boils down to is to first calculate your actual lean body mass and from there set up probably 0.8 or 1 gram of protein per lean pound you weigh because we suggest that protein is…we know is the building blocks of your body. It is necessary to maintain lean mass or even increase it.

So just maintain a stable amount of protein. Don't go low. It really doesn't make any sense. You will not be more or less ketogenic if you eat less protein or more protein. Then, keep carbs low enough as to induce ketogenesis, which for normal people would be 30 grams. Some small-frame people may do well or better with 20 grams, especially those who are very insulin-resistant. And the rest of your calories should come from fat. Like how many grams of fat? It really depends on your goals. If you want to lose weight, you have to eat less fat. If you want to maintain, well, you have to reach your maintenance calories. Or, if you're going to want to gain a little bit more weight or even increase muscle size, you should probably eat a little bit more, not a lot more, let's say probably from 200 extra calories from your maintenance, and also depending on the type and duration of exercise you're doing.

Now, this brings us to another myth that we see very prevalent on ketogenic communities, which is that people usually think that they have to keep fats higher than protein, but what they don't understand is that when they read that fat should be higher it is actually in reference to the percentage of micrograms, the actual calorie each micro gives, not the actual gram by itself. So you could have 150 grams of protein and 150

grams of fat, and even then fat would be higher in the percentage from the calories. People don't know this and then they say—you are doing, for example, a maintenance ketogenic diet—that it's wrong because your fat is not higher than protein. Or, even if you were having let's say 150 grams of protein a day and then 130 grams of fat, for example in my case, which is normally around the numbers I use, the calories from fat are still higher than the calories from protein. So I'm also getting most of my energy from fats, not from protein. Protein is just used to maintain my lean body mass.

Danny Lennon: Right. And so we've mentioned things there of getting…so setting up their diet in the first place in terms of understanding where their macros should be, is it kind of commonplace people make a wrong…? Earlier on you mentioned how some people think of it as just using tons of butter and bacon all the time as opposed to looking at other better food choices.

Luis Villasenor: What happens here in this part is that because people think that fat should be 70, 75% of the diet calorie-wise, they reduce their protein intake, and this at the start may lead to a higher weight loss but it is not a healthy weight loss because some of them may be even losing lean mass and then they stall, they stop losing weight and then they wonder why, think the diet is not working anymore. What happened is that they probably reduced their lean mass because also they are not exercising, and then of course they will eventually stall and they actually, if you look at the body fat percentage, they may actually have increased it.

Danny Lennon: Right. So yeah, another thing of people being afraid to keep protein at a relatively decently high level especially when they're combining that with some sort of training.

Luis Villasenor: Exactly.

Danny Lennon: So what other typical mistakes do you see people make when they start implementing some of the stuff and trying to use this dietary approach? Are there typical failure points that people should be aware of?

Luis Villasenor: Sure. First, as we said, this not setting correctly the macros and going too low on protein because they may be afraid of…the myth that is also very prevalent about protein turning into chocolate cake or protein turning into sugar because gluconeogenesis blah, blah, blah. People forget or they don’t really understand the background of this process, and ketogenesis will happen anyhow, anyway. It's not that 1 gram of protein you ingest will turn into 1 gram of sugar. It doesn’t happen that way. And it's really something that only diabetics especially type 1 should be like reviewing.

For normal persons who want to lose weight or are doing ketogenic diets for sports performance, it's really not an issue. Like we don't suggest you want to go super-high on protein because protein is not an energy source. It's just to maintain and build. So adequate protein is a must. So that will be the first mistake.

The second mistake is, as we said before, overeating on fat because just chasing ketones or chasing a percentage number. It does not work like that. You still have to maintain an adjective on calories. If you overeat, you will gain; if you under-eat, you will lose.

And then the third mistake which for me would be probably the most important is not really measuring or paying importance to electrolytes especially sodium. Most people who start a ketogenic diet just start for the sake of it without actually being well-informed. They don't pay any importance to sodium. And when you start a ketogenic diet, you will lose a little bit of glycogen, you will lose water weight, and then by itself you will also lose sodium and electrolytes. So what happens is people start feeling very tired and lethargic—they might even experience hand trembling, hand tingling, heart palpitations, arrhythmia—and then they will think that this is due to not ingesting carbs, so what happens is most probably some people will leave the diet after one or two weeks because they don't know what is happening and they think they actually need glucose or carbs when what they needed was just to add a little bit more of sodium to the diet, let's say 2 grams, or what we suggest actually is 5 grams or even 7 if you exercise a lot. But people who do actually pay attention to electrolyte levels and have them throughout the day, they don't have any of the issues that most people who do the dieting correctly will have.

Danny Lennon: Right. So do you just get people to take on some extra salt at their meals or take an electrolyte supplement and stuff like that?

Luis Villasenor: Yup. What we suggest is, for people who are just starting a diet, we follow very much like the classic bodybuilding protocol where it is suggested that you wake up and have a shot of water with a little bit of salt in it. This works very well for most people. And then throughout the day, you can either salt your food and make sure you eat at least 5 grams, or prepare like an electrolyte drink. We call it even the ketorade, which is basically about 2 or even 5 grams of salt or sodium—seawater can work as well or mineralized water with a little bit of cucumber or lime you can add if you want some magnesium as well, even stevia or a sweetener if it's your

taste—and drink it throughout the day. Or, you have the paleo approach where you can also drink a little bit of broth or bullion. It really depends on your taste and preference and your lifestyle. The important thing is just to have enough sodium spread throughout the day. Do not take it just all at once because you may experience diarrhea.

Danny Lennon: Right. And so do you touch on potassium at all or does that end up not really being an issue for most people?

Luis Villasenor: For most people it's not really an issue unless you start to feel symptoms. If you follow a balanced diet approach in which you eat mostly whole foods, you will be ingesting enough potassium from spinach, some meats, avocado, etc. If you rely mostly on processed foods and whey shakes, butter and etc., of course you will start feeling those symptoms. Like we said, people who get the symptoms are probably those who are doing a ketogenic diet wrong that they're relying on processed foods, those who use…ingesting bulletproof coffee and bacon and butter and cheese everywhere. And those who actually rely on more whole foods will rarely really have to be worrying much about electrolytes because they are already getting them from whole foods.

Danny Lennon: And yeah, so that kind of brings up one of the other kind of main concerns around fiber intake when someone goes on a low-carbohydrate diet. As long as someone's including plenty of fibrous vegetables, they're good, but like you say, if they're going on the butter and bulletproof coffee and bacon diet, then it's possibly going to be an issue.

Luis Villasenor: Exactly. By itself, a well-balanced ketogenic diet is even though you are in 20 or 30 grams of carbohydrates a day, these are net carbohydrates, but what it means is that you take the actual amount of carbohydrates in a diet, in your macros, and then you subtract fiber. So what this means is you actually get to eat a lot of vegetables in your day. To set an example, 200 grams of avocado, a regular-sized avocado, will probably if you look at the macros have about 14 grams of carbohydrate, but from those 14 grams of carbs let's say that 10 are fiber, so you actually just are eating 4 grams of carbohydrates from a whole avocado. You could actually, let's say, eat three or four avocados a day and still be within ketogenic numbers, and of course you would have to play with calories as well, but it's just an example of how much vegetables or foods you can actually have on a ketogenic diet. If you were to do the same example like spinach, for example, you could be eating 300 or maybe half a kilo of spinach a day and still be below 30 grams of carbohydrates.

Danny Lennon: Right, yeah. I think that's a super-important thing because people miss that and think they need to take out all sort of plant matter just because of any sort of trace carbohydrate, which is obviously not the case.

Luis Villasenor: Exactly.

Danny Lennon: Luis, if we switch our attention towards maybe gym trainees and particularly some things on the sporting side, I think maybe a good place to start would be strength athletes or powerlifting just because you have experience in the area and it's an interest of mine as well. So if we're considering a strength athlete like, say, a powerlifter or someone who's training in a similar manner to that, obviously we don't have the major limitations of needing tons of glycogen for training the way we would if someone is doing, say, really high-intensity CrossFit or basketball or soccer, for example. So because the glycogen usage isn't going to be used during most strength workouts particularly when we have like lower reps and higher rest periods, we can probably see then that there's not the same demand for carbohydrate that way and so it makes logical sense that a ketogenic diet can do well. But just to play maybe devil's advocate, on the other side I think one of the reasons some people push for not, say, suggesting this for powerlifting or strength athletes is that we know glucose has other types of effects. For example, some preworkout would help activate central nervous system. Just having higher glycogen stores in general as opposed to completely tank levels can send signals to the muscle as well. Decreased rate of perceived exertion, stuff like this is related to glucose and glycogen levels. Do you have any kind of thoughts on that and what have you found practically with both yourself and then trainees?

Luis Villasenor: Coincidentally, I was just having a call with Menno Henselmans this very morning and we were talking about the psych issue. As you say, more so than the actual fear people have doing a ketogenic diet for powerlifting or bodybuilding, there's really not much warranted. You can actually do perfectly a ketogenic diet on powerlifting, bodybuilding, etc. because they are not very glycogen-dependent. As you say, you have lots of rest. Even if you don't eat much carbs, as you know, glycogen stores will be refilled by themself probably one or two days at most, and then you also have…the glycogen also recycles from lactate via the Cori cycle. So really, you're never going to be really fully glycogen-depleted. That's the first issue.

Then, you have another thing that if you have been doing a ketogenic diet for a while, your body's also used to preserving muscle glycogen better. It's not going to be using it as much as if you were on a high-carb diet because you're also using fatty acids, you're using ketones, and really you're going to be using mostly your glycogen, let's say, for an explosive movement or at the start of the training, but eventually you're not going to be using it that much. So let's say first that you become adapted, you are going to do very much better on any kind of sports than if you are just starting a diet and expecting to perform exactly the same.

So what I have experienced myself and what I actually do, first of all, we talked before about sodium intake – if you're going to be doing, for example, powerlifting, I do suggest you have at least 2 grams of sodium before working out, let's say 15 or 20 minutes before. Then, another approach is what we call the targeted ketogenic diet, which is for people who actually have adapted, have done the ketogenic diet for a while, which boils down to the classic saying of earn your carbs. There is a benefit of ingesting a little bit more carbohydrates around your training, and when we say a little bit we are talking about 5 up to 15 grams before. Probably you could ingest a little bit also later, the same amount. You really don't have to go super-high-carbs, not necessary.

But one is the psychological aspect; another will be blood sugar levels. As you know, there are some compounds that may be better absorbed with a little bit of glucose like creatine. Especially for those who are taking creatine on a ketogenic diet, there's a myth that creatine without carbs do not work. So, for example, that way you could have creatine with a little bit of glucose or you can have creatine as well with some whey protein, it doesn't affect anything. Or, now there's also a protocol where you use creatine with—I forgot the name of this compound. I don't know if you've heard, there's another herb that works very well with creatine when on a low-carb diet, fenugreek.

Danny Lennon: Oh, yes.

Luis Villasenor: So especially, for example, what I was saying is you could use a little bit of glucose before training, let's say 5 grams, 10 or 15, depending on the duration and type of training. Creatine works very well on a ketogenic diet. As I said, either way, a little bit of glucose or with whey protein or with caffeine, or with fenugreek if that is the case. You could also play around with exogenous ketones, which are like everybody's talking about them right now. I've experimented with them.

What I personally do and what I have done to have my current physique is exactly that recipe, 15 grams of glucose preworkout along with 15 or so grams of MCT oil for energy and a little bit of whey protein just before. So I also add a little bit of coffee for energy. This helps with energy, this helps with fatigue or perceived fatigue, maybe a bit of placebo as well, but it's like a concoction I make and I use on myself and some of my clients. And it's like you just take it, go and lift heavy things. Really, there's no difference in people who have started a diet and are taking these than people who have not or are doing a non-ketogenic diet. They actually break PR this way without actually more carbs in them. So it's like a sensible approach that you get a little bit of both worlds.

Danny Lennon: Yeah, that makes sense. And so I think the other kind of concern many trainees may have is, on the other side when it comes to body composition, looking at muscle growth and purely on the basis that we know the main stimulus is going to be obviously adequate training and then calories and protein, but then there is the case to be made that people will look at the anabolic environment we have when insulin levels are slightly higher. So do you think this plays enough of a role for us to say that for the absolute maximum amount of muscle growth in a period of time it could be better to have more insulin around or does not really tend to play out in reality when you look at it?

Luis Villasenor: Well, from studies and the little cases that are recommended out there, there's really no big difference in regard to the actual amount of how much muscle you're possibly going to be able to build on a high-carb diet versus a ketogenic diet. Probably, yeah, there may be a little bit better on a high-carb diet but the actual question is, how much more? I think that for most people this is not going to be really that important.

Like, let's say my case. I weigh right now 72 kilos or so. I am around 10% body fat. I can do deadlift of almost three times my body weight; let's say 455 pounds was my latest one. So when I balance out these numbers, and I'm actually going to be 39 in less than a month, so when I put out these numbers on fat-free mass index, they're very like…let's say that I'm almost near my genetic potential, and then people see this and they actually say to me, “Well, you will be way stronger with carbs,” or “You will be leaner with carbs,” or “You will be more,” I don't know, “bigger with carbs. So it's called moving the goal post – I really am content with what I have achieved. I'm not really looking to become a bodybuilder or a stage bodybuilder.

I think for a natural athlete, this is perfectly in line with what most people will want in a lifetime. So again, the point is I don't think there's going to be much big difference in regard to how much you would be able to build with carbs than without them. What I see is a benefit of maintaining a lean physique all year round with while maintaining power because there's really not going to be loss of power when you are adapted, of course. The only loss of power would be when you start a diet, but you can very well maintain a leanish physique all year long with strength levels while recomping. When on a traditional high-carb diet, the normal approach would be going to bulk-and-cut cycles. But again, this is not like putting stone. It really depends on the person and the goals and how they are going to approach the diet.

But again, yeah, for my experience, there's really not going to be a big difference and I've seen people that have never strength-trained before and started doing so on a ketogenic diet, and you can see their stories every day on the group, and they aren't like…people ask them if they are using steroids or something because their growth has been like very…like not the normal for what they expect. But if you look at what they are doing, it's very understandable because they are following a very measurable approach both in dieting and in training. They are not losing their time. They are not stuck in the cycle where they go to the gym and then more time on their cell phones than actually working out. They are following a well-structured program, they are having an adequate protein intake, and they are having enough energy. It really doesn't matter if the energy comes from carbohydrates or fats as long as you have adequate protein, adequate training stimulus and adequate calories.

Danny Lennon: Yeah, yeah, for sure. And so I think then if we were to consider, well, what populations maybe should be wary of using a ketogenic diet or populations that probably may not do as well, and particularly when we're looking at athletes, for example, where it makes more sense than if we're looking at sports where there's going to be a high demand for glucose and glycogen to generate ATP, so like I mentioned previously, real-high-intensity CrossFitters or MMA fighters training multiple times per day at really high intensities, certain field sports like I mentioned during competition. Do you feel that there's anyone outside of those maybe that also should be a bit wary of trying this approach or do you feel it's just maybe reserved for athletes at those super-high levels that performance is the number one goal that maybe this might not be the best way for them to go?

Luis Villasenor: I think that it can benefit anybody who wants to lose weight, for example. Even if you are a high-end athlete and want to lose a little bit of body fat, I think it's a sensible approach. Practically, all athletes will lower carbs when they want to lower body fat even if they are not going into a ketogenic mode. So it really depends on the season. Now, of course there are some sports that will benefit, as you said, more of a high-carb approach. And even more so if you're training for Olympics or professionally, you have to go all the way. But, coincidentally, there are also more studies being done and experiments being done on low-carb diets for sports performance. I don't remember the classic saying but it's, "Train low, go high."

Danny Lennon: Yeah, so it's train low, compete high.

Luis Villasenor: Exactly.

Danny Lennon: Yeah.

Luis Villasenor: Exactly. So it depends, as you say, on the type of sport. Probably, soccer players are not going to benefit much from doing a ketogenic diet, but probably endurance athletes—I don't know if you've read the news about the Tour de France. I think the two winners were doing a low-carb diet. So it all boils down to experimentation and you're going to use your carbs strategically around training. So it's a new…like it's virgin territory and it's ripe for starting.

And again, for normal people, I think if they want to try it it will benefit them exponentially especially in regard to body composition. Most sports will benefit if you have less body fat. So let's say if you're a runner, of course you're going to do better the leaner you are. If you are training for physique because you're bodybuilding, of course the best improvement you can do is probably lose body fat. Even if you have lots of muscle and they're not visible, well, lose a little bit of your body fat in a healthy and sensible manner and probably a ketogenic diet approach, or a low-carb approach because you don't really have to go full ketogenic, will be better for you.

Danny Lennon: Yeah, I think that's a really important distinction to make the difference between, say, an athlete going through a fat loss phase maybe either out of season or just away from competition and then the actual performance phase on the day they're actually having the event. So we just mentioned there the "train low, compete high" where people are using low-glycogen availability during certain training sessions to get positive adaptations, but

then having carbs back up for the actual competition, which is exactly in line with you mentioned the Tour de France, which I think the Team Sky guys are overseen by James Morton, who has been behind a lot of that research in the area and I think there's still more to come, but yeah, it's interesting to see how for either certain stages of the Tour de France they're using low amounts of carbs or on certain rest days, and then for the real high-intensity ones they'll ramp up the carbs and they're kind of matching it towards those demands. So like I say, this is where the kind of the context that I've been able to apply things in different scenarios is super-important.

Luis Villasenor: Even on CrossFit, even if that is a more glycolytic sport, I have some clients here in Mexico that actually compete in the CrossFit Games in Mexico and what we did was actually just the TKD approach – they practically stayed low-carb, they did a ketogenic approach during the offseason, and when the actual games were played they actually not carb-loaded but ingested more glucose and a little bit more carbohydrates around training, and it worked very well for them. Most of them ended on the like near first place I think one and I think the second place here in Mexico. So they improved body composition, they lost a lot of body fat, but they also managed to peak during the actual competition with a little bit of carbs.

Danny Lennon: Yeah, that's super-interesting. And I think another point you had just previously mentioned around people need to just be aware of, well, what are they trying to get out of this? And obviously everyone wants to do well at a sport but there's a difference between whether your sole focus and your only goal is to be like number one in the world versus whether you, for example, are doing CrossFit and you enjoy doing that and then you want the benefits of eating in a certain way because you enjoy ketogenic dieting, and then you can kind of blend those two as opposed to thinking you need to be going to be the next Rich Froning or whatever. So yeah, I think that they're really important considerations. Luis, where can people find more about the information where they can track down Ketogains itself and get more of this stuff in a bit more detail?

Luis Villasenor: Sure. You can look us up on Ketogains.com, and then we also have our Ketogains Instagram account. We also have Ketogains on Twitter. We are mostly more active both on Reddit, you can look up Reddit.com and look for Ketogains there, or in Facebook we have a big group that is called Ketogains as well. It's not a fan page. You can also look us up on the fan page, but the group is a very active board or forum where you can

get…like post your questions and we'll review them and there's a lot of activity there. We have lots of moderators that will answer all the questions and we are all in for experimenting and trying new things, everything is science-based, evidence-based. We are not closed into the mindset that a ketogenic diet is the best approach for everyone, but we are very passionate about low-carb and all the applications that a ketogenic diet by itself has as well as, let's say, intermittent fasting. So we always try to keep that mindset about a ketogenic diet but, as we said, we are very open to all approaches and protocols, so we try to demystify and keep out bad science or even the romanticism that some diets have. Like we said at the beginning of our talk we do believe that calories are what matters most than the actual macronutrient ratio and composition of the diet, and then you deciding you apply a ketogenic diet approach or a low-carb approach or a high-carb depending on your goals. But that is basically what we do on Ketogains and that's where you can find us.

Danny Lennon: Excellent, and that will be linked up in the show notes for everyone listening that you can go and check that stuff out. So Luis, that brings us to our final question that we end the show on and it's simply if you could advise people to do one thing each day that would improve their life in some aspects, what would that one thing be?

Luis Villasenor: Okay. I would suggest everybody to look up for answers by themselves. That is actually what led me to begin Ketogains in the first place. I was frustrated with not knowing the real answer to some questions, knowing how a thing works and getting the real answers. So what I suggest to someone is look for the answers by yourself. Look for different sources before you actually make an opinion. Try to learn by yourself how a thing works, see how you can apply it in your life, and see if it makes you a better person, and then try to spread the message out.

Danny Lennon: Great. Great message to end the episode on. Luis, I want to say thank you so much for your time today. Appreciate it, especially as it's been a couple of times that we've been chatting about this stuff. So thank you for your time and for the information.

Luis Villasenor: Thank you, Danny, for having me.

Danny Lennon: Right. I'll talk to you soon, buddy.

Luis Villasenor: Buh-bye. Thank you.

Danny Lennon: So there we go, some fantastic information there from Luis. In the show notes, I'm going to link up to some of the work that's been put out on Ketogains and where you can connect online with those guys, and you'll also have the option to get the full transcript to this and all other episodes for absolutely free, and that'll be at SigmaNutrition.com/episode137 where you can find all of that stuff.

If you want to find me on social media, then just either search for Sigma Nutrition on Facebook or follow me on Instagram at my handle, dannylennon_sigmanutrition.

And finally, I wanted to mention just how super-excited I am to let you know that the Sigma Nutrition & Performance online coaching program has had even more comprehensive services added to it as well as a new team member lately. With our coaching, you'll receive one-to-one weekly coaching from our world-class coaching program. You can select either from a nutrition-only package, training-only package or what's most beneficial generally is coaching for both nutrition and training and programming together. I just can't tell you how pumped I am at some of the results our coaching clients have been getting lately and just really how proud I am of the team that's here and been working on that. One of our coaches, Gar Benn, who actually does all my training program for me personally, has been killing it lately. People are just responding so well to it and I'm just overly impressed actually with the job he's done so far. And we've been recently able to announce a new coach, Arthur Lynch, to our team. Arthur's a PhD candidate in muscle physiology as well as being an international IPF powerlifter in the 93-kilo class, just recently competed at the world championships in Texas as well.

If you want more information on our coaching program or on our coaches specifically, then just go to SigmaNutrition.com, just click on the online coaching tab and that'll give you lots more information about how that works and the people behind it and just what we're trying to provide there. I think it's becoming something pretty special. So if you are interested in something like that, then give that a look.

And that brings this week's episode to a close. I really hope you enjoyed the episode, and if you did I'd be extremely grateful for anyone who shares it out on social media. Let's just help get good scientific information out there and counteract some of the nonsense that's out there particularly on some of the topics we've discussed today. I will talk to you in our next episode and, until then, have an awesome week.