

[00:00:00] Welcome back to the Flex Diet Podcast. I'm your host, Dr. Mike T. Nelson. This is a podcast where we talk all about how to get stronger. Increased muscle, better body composition. Done in a flexible approach all without destroying your health in the process. And today is a three question. Ask me anything.

Just a few of the questions that I've compiled that I wanted to answer for you. You can also check out the link below for the other Ask Me Anything me anything podcast I did before. In today. I'm answering questions about, should you do some type of reverse diet? I E what to do? If someone has been on a very low caloric approach for quite some time.

What about the Lumen [00:01:00] device? Is this a good way to measure metabolism and metabolic flexibility? What are your thoughts on it? Did you have any experience? And question number three was how do you trust? Different supplement brands. And what should you look for? When buying sports supplements. So I answered these three questions here.

And if you have any other questions, there'll be a link down below where you can submit questions and I will add them to the list and do the best that I can. To answer them at some point, although it may not be super timely. I'll do my best to get answers back to you. Podcast today is brought to you by the Flex Diet Certification

Go to [flexdiet.com](http://flexdiet.com). F L E X, D I E t.com. [00:02:00] And you'll learn ways to increase your body's ability to Primarily using nutrition and movement sleep fasting. These are also very helpful for performance and body composition. As of this recording. There is a wait list right now for the flex side search. Since it's not open.

But you can get your name on the waitlist. So you'll be notified as soon as it opens up that also puts you on the daily newsletter. We would get all sorts of great information from yours. Nerdy here, completely free. So go to [flexdiet.com](http://flexdiet.com) for all the information there. Thank you so much for listening and enjoy this. Ask me anything podcast.

[00:02:52] **Dr Mike T Nelson:** Question. How do you suggest dealing with clients who have spent years dieting and eating [00:03:00] close to 1000 to 1200 calories? Physiologically, do they need a period of reverse dieting to bring their calories back up? I have read so much about the metabolic effects of low calorie

intake for long periods of time, but practically it's tough to get these women to eat more.

So a couple things to my answer to that. One, I would say that it is generally harder with this population to convince them to eat more. The caveat in this statement is that most feel they're eating a thousand calories per day and not making any progress. If we take a hard sort of calories in, calories out approach, most of the people I've worked with in this area are actually eating quite a bit more than a thousand calories per day, but their self-report and their perception is that they're only eating a thousand [00:04:00] calories per day.

If we look at even just the basic equation for their resting, the metabolic. almost all the time. It's gonna be higher than a thousand calories per day. Now the issue comes into when, what would you recommend that they do? And this is where I differ a little bit with the sort of calories in, calories out people that, yes, if we were to take these people, lock them in a metabolic chamber, then we measure all the air that goes in and out.

We measure all the heat, we watch their activity. Are they gonna be burning more than a thousand calories per day? Almost all the time. Yes. However, their perception is that they're only at a thousand calories per day. So what I'll do with them sometimes if they're open to it, is take a period of one to two weeks, have them literally log and weigh everything they possibly.

Now, I know that [00:05:00] this is not always possible for everyone. And yes, this means even weighing their broccoli, their chicken breast, et cetera. If they go out to eat, they would have to note that. It's very hard to get any idea of calories other than a very rough approximation if they're eating out a lot, Even if the restaurant has caloric values on their.

At best, they're just a shot in the dark, right? I guarantee the cook or the chef in the back is not looking at any of the caloric values. When they add more oil and portion sizes are off, their sure is hell not weighing everything out to the end degree. So you can take a period of time, have them log away, even their broccoli, even their vegetables, everything for one to two.

Now again my goal with that is to have them change their level of awareness. Most of the time, almost all the time, if they are able to do this, [00:06:00] they'll come back and realize, Oh wow, I was actually eating like 2300 calories per day. Or there may be things that they just forget to put in their log.

Years ago I had a client who we did this with, she still was claiming she wasn't losing any weight. I couldn't figure it out. I was pulling all my hair out and I talked to her again on the phone. I, we went through literally her diet record that she had put into My Fitness Pal. I used Cronometer now, which is a lot better.

And she said that, Oh, I didn't log any of my coffee, and I said, Oh, what kind of coffee was it? I was thinking it was just, black coffee, so no big deal. She's I was drinking coffee and I put some butter and coconut oil in it. Oh, okay, how much butter and coconut oil do you put in?

I was like, Oh, probably about one tablespoon of each. Oh, okay, that's a fair amount of extra calories there. and I asked, I [00:07:00] said how many of these, oil coffees are you drinking? I was like I generally drink three to four per day. . I was like, three to four per day. Had two tablespoons of oil each one.

Holy crap, that's a lot of extra calories. And I said but you didn't log it anywhere in your log. She's I didn't log it because there's no insulin release so it doesn't count. , So again, Most of this is done as exercise and awareness. And for the record, once we modified her coffee intake to just one, she started losing weight again.

So most of the time it's a perception of where they think their calories are at, and sometimes they do log things, but it's usually just, eyeballing it. Again, you will have some cases where, Their ability to record everything is not possible for whatever reasons at that point, as much as I don't like using templated meal plans, [00:08:00] I may give them a very simple meal plan to follow, which may not have much variety on purpose.

It may just be. Some type of lean meat, a vegetable, and maybe a little bit of starch, right? So I'm purposely gonna put them on a low caloric approach. Variety is gonna be almost zero, and their job is to be very compliant again for one to two weeks. Again, this is not something I would do long term with clients just trying to show them that if they are actually eating very low calorie.

Their perception of what they're eating before was probably off. So again, if it's not a perception issue, you can see some temporary changes If you're just using body weight again, if someone is realistically eating 1200 calories, let's say for a week. Their body weight may not necessarily move around, right?

And [00:09:00] women, it may be related to the certain time of the month could be related to some type of inflammation, water retention, et cetera. But if you go for a long enough period of time, those things should generally write themselves

and you will see body weight going down. The other thing I look at also is what is their performance in the.

Most of the time if they are eating extremely restrictive for long periods of time, their performance is generally not gonna be very good. So that's another caveat that they're probably under reading. In terms of how do you change it, would you do some type of reverse dieting? I like the concept of reverse dieting.

We can debate if it's really needed based on physiology. I think that's probably a little bit debatable, but the reality from a psychological point of view most it's usually typically women who have been eating very low for a period of time are not gonna allow you to dramatically increase their [00:10:00] calories.

So adding more back, I generally like to add more carbohydrates and then monitor their performance if their performance is getting better body weight. Staying about the same, then I know we're moving in the right direction in terms of how much more carbohydrates I would add per day. A lot of that just depends upon how much they'll let me add.

I'm not a big fan of, adding, ooh, 10 grams of carbs per day. If that's the max, they'll let you add them. By all means, take it, but. Adding more than that, I think is gonna be beneficial. Another thing I've done too is add just a single higher carbohydrate meal, typically the night before their bigger session.

So let's say they've got a bigger volume training session on Monday. Their higher carbohydrate meal then would be Sunday night. And sometimes what you'll see [00:11:00] is possibly related to different hormonal changes. They'll wake up Monday morning and their body weight, paradoxically may even go down a couple pounds, and that usually to them is quite shocking and their performance in the gym is going up.

So what we're trying to do is retrain their body and especially their nervous system, their perception, their psychology, that just because you eat more, especially within one meal, doesn't mean that it's all gonna go to fat. And you can do very simple. So if you, let's say add in hundred extra grams of carbohydrates, and let's say that a hundred percent of that goes to fat, which is not gonna happen a hundred grams times four calories per gram, that's 400 extra calories.

You would need about 3,500 calories to add one pound to fat. So even if all of that goes to fat from a single meal, You are not gonna be [00:12:00] able to

notice it. And sometimes that's enough to just break their perception. It's a long winded answer and there isn't really a short way to work on it.

But I do using other indicators, especially performance. I may use resting heart rate or heart rate variability. Normally, once you start increasing calories, heart rate variability gets better so you have another marker to point to them and say, Hey. HRV is getting better, so you're going in the right direction.

Scale weight really hasn't gone up a lot. The caveat here is yes, if you add a lot more carbohydrates, they are gonna retain more fluid. Glycogen itself, it's gonna retain a lot of water. So watch out for that because then they may freak out when they get on the. But it's more of a long term process in terms of reverse dieting.

I like the overall idea but we're just looking for leverage wherever we can get it. Again, if we can get them to realize they probably weren't eating that low [00:13:00] of calories and change their perception of what they're doing, that's gonna be beneficial. And then of course we wanna make some better physiological changes.

And most of that, again, is dialed back into their perception and the change that we need to make. But it is quite difficult and it does take some time. Hang in there with it.

Question. Is there any evidence that the Lumen device to measure your metabolism is useful or correct? I've been curious about that. I've received fair amount of questions on Lumen and in theory it's a cool device that it measures air exchange. And is a way to potentially measure metabolic flexibility.

Obviously, my research was in metabolic flexibility, so I'm very pro on that theory [00:14:00] for metabolism. You can poke around, find lots of other information on it, but briefly, metabolic flexibility is how well does your. Use carbohydrates on one end of the spectrum. How well does your body use fat on the other end of the spectrum?

And then how well can you transition back and forth? How fast can you switch between the use of carbohydrates and the use of fat? So what Lumen is a CO2 sensor. That they're using to measure metabolic fuel in a resting state. So in theory, it can access real time CO2 data. The measurement itself will take about 30 seconds.

You can do this at home, so you don't have to go into a lab to do it. And according to their website and some of the research they publish that this may be equivalent to [00:15:00] RER so RER is respiratory exchange ratio, and it's the ratio between carbon dioxide and oxygen. If you have a higher r, you are closer to 1.0.

That is a hundred percent of fuel is used from carbohydrates. This would be during high intensity exercise. Potentially also after a higher carbohydrate meal, your RER will go closer to one. If the r is closer to 7.70 would indicate you're using a hundred percent fat metabolism. Now, the caveat with Lumen is that it's only measuring  $\text{CO}_2$ .

If we look at a high end device, which would be called a metabolic cart. If you've ever seen exercise studies test where you have the person doing a [00:16:00] lot of exercise, they've got a face mask on with a hose going to a device that is most likely a metabolic cart. With that metabolic cart, they are measuring oxygen and  $\text{CO}_2$ .

So I'm in the device. They're measuring flow rate. So how much air is going past? Lumen does have a flow rate sensor. and they're measuring both oxygen and carbon dioxide. Some of the nicer devices will do something called breath by breath analysis. So each time you're breathing, that gas is captured and it is giving you a data point.

So for example, I do have a metabolic cart, which is a PNOE device, and that does breath by breath. Calibration and breath by breath analysis. The pro of a metabolic cart is you can get a very accurate rer. So during exercise or during at rest, we can look and tell via what's called indirect calorimetry, what fuel source your [00:17:00] body is using at that particular time.

We can have you do different types of exercise. We can then calculate a whole bunch of things such as Fat Max, which is a maximal amount of fat your body is using. Sometimes called mfo, maximal fat oxidation, et cetera. So those devices are useful, but unfortunately they're also very expensive, like several thousand dollars.

And it's a little bit inconvenient because you have to have a face mask over. So you wanna account for all the air going in and out. So Lumen gets around this by using just  $\text{CO}_2$ . So  $\text{CO}_2$  sensor is actually from the automobile industry and appears to be relatively accurate in terms of a pure  $\text{CO}_2$  sensor.

They do have a one study that's published on a validation which is quote, a handheld metabolic device lumen to measure fuel utilization and healthy young adults device validation study. We can pull apart the study maybe at [00:18:00] another time. in general. It said that it's pretty decent. Now, again, you can always argue that the study was sponsored and it was a low number.

There are definitely some limitations with it, et cetera, which they did site in the study. But at least they have some data showing. I did have, or I still have a lumen device. I actually have it loaned out to someone else to get their opinion on it. What I did find was that it was pretty easy to use which was nice.

And overall, me, I would say the data I got it from was mixed, and there's a couple reasons for that. It is only looking at  $CO_2$ . So if we wanna equate  $RER$ , we're gonna have to do some sort of algorithm and some sort of calculations in the background to transfer that into fuel usage. In theory, you could come up with some algorithms and some work to [00:19:00] do that.

The other part is I think it is good for awareness. , anytime you measure something people are gonna be more aware of what you're doing. So the fact that you're getting this measure of metabolism each day odds are you're probably gonna pay more attention to other things that you're doing.

So I'd say that's generally a pro. So in terms of clinical studies with Lumen, I know they have a couple that are underway. I haven't seen that they've been published. , but it might turn out that it for weight loss in a general population it may be useful. Again, once the study comes out, we can split hairs about how that was useful.

Was it from the measurement itself? Was it from awareness? Was it from changes that the algorithm had you make? Eh, once it's out, we can look at that. The issue that I had with it is even. At rest if we get a highly accurate  $RER$ , I'm not [00:20:00] convinced anymore that is all that useful. So here's what I mean.

With both metabolic carts and so PNOE device and some other devices I've had people and clients measure their  $RMR$ , so resting metabolic rate at rest. And what I've seen is at the  $RER$ , even with a different machines, different labs, is quite variable, meaning clients that other measurements would say they're very good at using fat.

So for example, looking at it under exercise, sometimes their  $RER$  would be much higher than I would expect. So remember, a higher  $RER$  is closer to 1.0, which means you are closer to carbohydrate Metabol. . So in theory, if we do

this measurement after an overnight fast after rest, we should be back down to using mostly fat.

And I saw this on the Lumen device and I've seen it myself on my measurements [00:21:00] and across other labs too. It appears that resting rer, I'm not convinced anymore as a really good proxy of the fuel that you're using at that point. What I've noticed is that if you are higher in calories, just overall.

That it'll skew your RER closer to one. And we were able to confirm this in a couple cases by, having the person get on a bike and literally just pedal between 50 to a hundred watts, which, for trained athletes is very low. As soon as they did that, the RER plummeted and dropped around 0.7 0.72.

So even with just a little bit of exercise, a little bit of stress on the system. The RER showed that they were now all of a sudden magically burning almost all fat. And we've seen this, again, there's some other literature to support this too. So I'm not convinced that even if we use a metabolic cart, the metabolic cart is extremely accurate, that taking that [00:22:00] rer from a resting measurement. is gonna be a proxy for their overall fuel usage.

I do think that it is showing what fuel usage they have at that time, but the overnight fast doesn't appear to be enough to give you what is representative under just a little bit of exercise. So that would be my caveat with that. Doing it all at. is, you may have some people who are very metabolically healthy and the device, and this would happen with Lumen, which is what I saw too, is showing you that you're almost always burning more carbohydrates.

So when I did the lumen and I did confirm this with the metabolic cart, it said at rest I was burning mostly carbohydrates. So I think that's not necessarily an error with the device. I think it's an error. Extrapolation of a data point to a different condition. And then I've also published some [00:23:00] studies looking at RER under moderate exercise, and what we see is that fat usage is extremely variable.

So some people are really good at using fat, other people are not. But I think for us to have that as a useful talking. , it would have to be under low levels of exercise. I'm not convinced that a resting rer or resting from say at rmr, so resting metabolic rate or basal metabolic rate, that number is representative of that person's physiology.

And unfortunately, I think because Lumen is doing a measurement at rest, unless it's corrected for by the algorithm. You're probably gonna run into that



same error. So in my case with Lumen, it was saying that I was almost always burning too many carbohydrates, even after doing the fast and other things instead, the same thing.

But when I would apply just a little bit of exercise using the metabolic cart, all of a sudden I was magically [00:24:00] burning mostly fat. So again, I think it's a, an air in the extrapolation that the condition at. Is where all your physiology is running around and probably not. The hard part is that if you have someone who is metabolically unhealthy, we do know that those people tend to burn more carbohydrates at rest.

So I think just getting a reading only at rest is gonna leave you open to interpretation for error. So that's my biggest complaint with it, and that's not necessarily an issue with the device. Now again, could you use the device and follow their algorithm? Could you see potential benefits from it?

Yeah, I think that you could. Is that actually from the device? Eh, that part's up for debate. So as of this recording, again, I don't have any financial incentives. With Lumen. They were nice enough to send me a device early on. For the price point right now, my overall thought is, eh, I would probably spend your [00:25:00] money somewhere else.

But if you really wanna dive down that rabbit hole, it might be worth playing around with. But the caveat being, I'm not convinced that a single point measurement at rest is gonna be super accurate and it, if you were in a case where you are metabolically healthy and you're eating, say, more carbohydrates or purposely in a caloric surplus, like trying to gain more lean body mass, it may be data throwing you in the wrong direction.

To me, if you've got everything, mapped out, everything is good, you're aware of that caveat and you wanna play around with it, yeah, go crazy. But my fear is that pinning all your hopes on a single device with a measurement that is only taken at rest. May potentially lead you down the wrong path, but it's a cool idea and hopefully they'll have other insights and maybe they'll show with the clinical trial that it is beneficial.

But at this point my [00:26:00] error or my advice would be probably take that money and spend it on, a couple months of coaching. Probably gonna be a move more in the right direction. And the last part too is that they do have coaching that does come with it. But again, that same caveat applies that if it says you're still burning mostly carbohydrates and that turns out to be an error you're gonna be working with information that's not super accurate.

Now again, if you're in a caloric deficit, protein is good and you have following all the other good. You could still very well get good results with it. Again, it just may not be necessarily based on that data. So that's my thoughts with the Lumen device currently. Thank you so much.

[00:26:49] **Dr Mike T Nelson:** Question from Mario. Love the newsletter. Quick question for you. How do you decide whether to trust a supplement brand? [00:27:00] I was taught to look for NSF certification label while deciding without third party testing. How can I as a consumer make a safer decision? Thank you. So thank you, Mario, for the question, and it's a really good.

So NSF certification is one of the certifying bodies that you can look for supplement testing. You can look up nsf.org, you can look for other places. Usually most manufacturers who have NSF or NSF for sport will have it labeled on. , I think it is a good indication if I have athletes that I know are gonna be drug tested, any of the supplements that I would recommend are gonna be make sure they go through a certification process.

One for the obvious reason. We wanna make sure that there's no even small amounts of any adulterated product within that too. You wanna make sure that it is what it says it. [00:28:00] And three is also for some level of liability protection. So that if something were to happen, the athlete could then show that, hey, here's the supplements that I was taking, and that they all have some form of a trusted, certification with NSF being one of the main ones.

Again, even when I do consulting I'm just only recommending what may be best based on the. It's always gonna be up to the individual athlete to decide what they want to put in their body, because at the end of the day, they're the one that is a hundred percent responsible for that. Now the caveat comes in where what about a brand that does not have NSF certification?

I'm not competing in any, drug tested sport. If they do not have an NSF certifications, that mean they are bad. Which again is not what you're saying, but that's the secondary question I get a lot. The answer to that would be not necessarily NSF certification and other certifying [00:29:00] bodies are not necessarily cheap at all.

It's quite expensive. The products to get them individually certified, not so much. But to certify all the manufacturing. Make sure it's following a good manufacturing process for something called gmp. There's a bunch of different steps, and I know several people who run a few supplement companies that are

following everything by the book, but just because of this year cost and a lot of their market is not necessarily high end drug tested.

They do not have an NSF certification. So I would say that it is probably something good to look for. Unfortunately, probably not the be all end all. Which the reality is in the supplement world, it makes it very difficult to figure out what brands to trust and what not to trust. I've been privileged to know a lot of people who've worked in the industry for several years, people who work for bigger companies, smaller companies, I've done consulting.

Done a couple formulations that I've sold, et cetera. [00:30:00] I've been able to visit different companies, tour facilities, sign NDAs, so I can't talk about some of it. But most of the bigger companies are usually pretty good. Again, there's always exceptions to that. So looking for a company that's been around for quite a while is helpful.

Sometimes you can find from like Lab Door and other companies. Testing that's been done on their product. And the other part I've found too, is the simplest thing you can do is just contact the company. The companies that are doing it correctly are more than happy to show and demonstrate all the steps that they've gone through to ensure everything from, qc, quality control, checking the raw ingredients to the manufactured product, to testing, et cetera.

All of that adds up to be a lot of. and then, I've heard horror stories of companies that have been shipped product from overseas and the label on it said it was supposed to be X and when they tested [00:31:00] it, it was not. So they basically lied on their coa certificate of analysis. Again, I wouldn't say those stories are common, but it does happen.

So companies that are putting their money into testing to ensure that the product is what it says it. It meets shelf life, et cetera. That all costs money and they have to make up that money somewhere. And so they don't like being undercut by under other companies that are just skipping a whole bunch of steps.

And unfortunately, that's passed on to the consumer, which it can be hard to tell from the outside. So a few takeaways, I would say call the company. The ones that are legit are more than. To talk to you to provide documentation to just also look around to see how long the company has been in business.

Again, not all new companies are bad by any means, but if they've been in business for quite a while and they're doing a fair amount of business, then if they were to do something incorrect, they do have a lot to [00:32:00] lose by

doing that if they're a brand new company that just popped up over. Yeah, they might be gone in a little while and they may not be so invested into doing all the things that are more expensive.

The last part too, even on my end, like I said, I've been able to work with a fair amount of companies. I've been able to tour places, and the reality is I'm not there. Their manufacturing site, I'm not overseeing. , realistically they could send me all the COAs they want, I'm assuming they're legitimate.

For me, at the end of the day, it is basically almost a semi blind trust that as far as I can tell, the people running it have decent ethics. I've been doing it for a while, are doing it as best as I can understand and vet in general with any companies I recommend for that I do some affiliate stuff with or work with for the most part.

Known them or least met them, talked to 'em over the period of several [00:33:00] years before I do anything with them again, there's some exceptions to that. Part of that is I just wanna see how do they treat people? What is their just general reputation? Are they gonna be here for a while? Are they staying around what are their processes, et cetera.

So I know it's got a little long, long-winded answer to your question. Unfortunately, some of it is still buyer beware. So do your homework. Ask around when in doubt call and talk to the company. Thank you so much.

Thank you so much as always for listening to the Flex Diet Podcast here. Really appreciate it to thank you for the questions that were submitted. If you have questions, there'll be a URL below where you can submit them directly to me via the website. I'll do my best to get you answers, but I'm always curious as

What questions do you have and how I can help If [00:34:00] you enjoyed this podcast, if you could leave us whatever stars you feel are appropriate and even a very short review, a couple of sentences. As a huge help to the podcast to get it. Pushed up in the old algorithms so that more people can listen to the content.

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It is currently on a wait list, but you can put your name in for the next time that it opens also puts you on the daily newsletter where you'll have all sorts of other great. Content based information for increasing the strength. Better body composition and [00:35:00] adding lean muscle. So go to [flex diet.com](http://flexdiet.com) F L E X, D I E t.com.

[00:35:07] **Dr Mike T Nelson:** Thank you so much for listening to this. I really appreciate it. If, someone who may benefit from this information. Please forward the podcast on or share it on the old social media. Make sure to tag me so I can say thank you. Thanks again and we will talk to you next week.