[00:00:00]

Welcome back to the Flex Diet Podcast. I am your host, Dr. Mike T. Nelson. Thank you so much for listening to the podcast. And today we've got just another solocast with myself. I've been super busy, trying to get a bunch of deadlines and creation of stuff done, but I still wanted to answer some questions that you had.

This week, we've got a question about, at what point does zone two or three cardio become beating a dead horse? Are you just sitting on a bike for two to five hours a day? Not getting any benefits. Another question was about. Long haul COVID or more specifically pots. So not like something you would cook in, but pot standing for

postural orthostatic tachycardia syndrome. Basically you get lightheaded when you stand up real fast. So talk a little bit about that, and that is related somewhat to cardiovascular [00:01:00] capacity. And then what do you do about low blood pressure and exercise? How would you deal with that? So those are our three questions this week on the ask me anything podcast edition.

And we're brought to you this week by the Flex Diet Certification, which is one I created. To help you, if you are In a fitness person. Coach, or you just want to get better as an athlete or even a fitness enthusiast. You want to increase strength, muscle and do it without, out in a way of destroying your health, but in a flexible manner.

The Flex Diet cert is eight different interventions from your macronutrients, proteins fats, carbohydrates. To fasting, to sleep micro nutrition, exercise. Neat. Got all things to maximize performance, adding muscle and better body composition. [00:02:00] Without destroying your health. So go to flexdiet.com for all the information. F L E X, D I E t.com.

It is most likely. Not open at this point, but you can get onto the wait list. You'll be notified as soon as it. Opens again. So enjoy this. Ask me anything podcast here. Talk to you soon.

[00:02:30] **Dr Mike T Nelson:** Ask me anything. Question here from Hunter Gonzalez on the topic of heart rate and related hrv, at what point does zone two or three training become like a beating a dead horse? I e I sit in zone two for

five hours a day. Haha. Just using that as an example, at what point does it become zone one and I lose the zone two benefits.

So for people who are not [00:03:00] familiar, the zone system is a way of tracking intensity. Of cardiovascular training, you've got zones one through five, one being probably maybe just walking. It's very low intensity, and zone five is very high intensity. So for endurance training, it's a way of specifying intensity level.

So think of it's a correlate to weight training. Weight training will use a lot of rep ranges. So same idea. So your low rep training for a cardiovascular endurance athlete would be like your zone five stuff. Zone one would be really easy. There's a lot of say data and talk online about zone two training.

So zone two training is. The rough version without equipment to measure it. I think you [00:04:00] can use something called the talk test if you can have a conversation while you're doing zone two training. You're probably at the right spot, like someone listening in would tell that you're exercising, you're breathing a little bit heavy, but you'd still be able to carry on and have an actual conversation.

At the point where you can't really complete full sentences, you're probably out of zone two. Again, that's an approximation. If you want to be more dead nuts on accurate with that, you would need a metabolic cart. There are some estimates with heart rate training online from the handful of people I've tested with a metabolic cart.

Yeah, the heart rate zones at best will get you in the ballpark. I do using some zone to training. I do using nasal breathing for that, which I've talked a lot about in the past. But at some point you're not really gonna get any more benefits from zone two training, in [00:05:00] my opinion. This kind of goes against some of the research in that area.

but we have to take into context what the research is looking at. If you're a very high level cyclist, I do think that there's a good place for a fair amount of zone two training in your overall training plan. Now, again, we could argue if. The athlete is getting benefits from that zone two training, especially after they've done it for quite a while.

Their fat max is very high, so this is the point at which you're using the maximum amount of fat as an energy source. But I think the main benefit in higher level athletes was zone two training, is that they're not out beating the

crap outta themselves doing real high intensity work again. So what I found with just a handful of endurance athletes I've worked with or tested, they tend to stay around the same zones.

For a lot of 'em, that's an [00:06:00] intensity. That's a little bit too. So the easiest thing I'll do is look at someone's program and if they're constantly between zone three and four, then I'll go with the kind of more split or what's called polar training approach. A lot more zone two work and then a little bit more zone five.

So zone five would be like your classic high intensity interval training where we're really going to push you hard. Heart rates are gonna be high, you're gonna recover, and then do that again. Zone two is gonna be much longer duration, and we're trying to build up that low end. But at some point, if someone's been doing a lot of zone two training for let's say two to four hours a week for eight to 12 weeks, I'm not super convinced they're gonna continue to get more benefit from that.

Yes, you do get the benefit of movement. So you could argue that if you have a more sedentary lifestyle, your step count is a little bit lower. [00:07:00] You're behind a computer most of your day because of what you're doing. Yeah, I think some zone two training can be useful as an acute recovery if your nervous system's real beat.

Yeah, I think some zone two, getting some, blood flow can be beneficial. Is it really going to radically increase your aerobic base levels at some. Yeah I don't think so. If I have an athlete who has a very low aerobic base, which you can look at the other AMA we did about VO two max, so volume of oxygen, you can run through your system.

The maximum amount, if that number is very low via metabolic cart test or a 12 minute Cooper run test or a two K on a rower concept. if that number is very low and the client has time and is open to the idea I do starting them off on a lot of zone two, basic aerobic based building. Typically you're gonna wanna shoot for [00:08:00] two to three hours a week.

This could be, say Tuesday, Thursday, Saturday. If you can do an hour each of those days, I would put you at the three hour mark. Again, it's low to moderate intensity, so you should be able to. , it's boring as hell. Ideally, I like people to do it on a bike cuz of a low impact, but even just sitting on the bike seat for that long, not super.

I would usually run that all things being equal for eight to 12 weeks, and then I would measure their VO two max. Again. Normally we see a nice uptick in their VO two max, and we've expanded their base, and if you're looking at a metabolic cart, usually they're better at using fat as a fuel to do that.

In a perfect world, if they could do it fast, You may get a little bit more, I think, benefit from teaching the body to use fat as a fuel that gets into the whole fasted cardio debate or not. But when I'm doing that type of [00:09:00] training, my goal is primarily looking at specific aerobic adaptations. I'm not necessarily thinking of it as a caloric drain, even though that it is.

So with that zone two aerobic base, We ideally want to increase the capacity of the body to use fat as a fuel. If that can be its own endogenous fat stores, even better. And I want just this volume of running oxygen through the system so that we do see a little bit of an uptick in VO two max. So my bias is, Do that.

If your aerobic base is real low or even moderate, you could make an argument to come back and do hit on an aerobic block maybe once a year. I usually try to do that once, maybe twice a year. At minimum. Take a block of time, run four to eight weeks, and do it because you can, depending on your training, lose some of that aerobic capacity over time.

The one thing I'm not a [00:10:00] big fan of, which you hinted at in your question. It appears the trend now is just no matter what, do like 3, 4, 5 hours a week of zone two training and you're going to be better. Yeah, you get some movement and you get some exercise. I think there is some benefit to that, but in terms of driving pure aerobic training adaptations, I'm not convinced that you're gonna get more out of it for most those people.

I would rather see them move. Some higher intensity work and even some more moderate stuff. There's some data showing if you want bigger increases in VO two max. Once you've got an aerobic base developed, these moderate level intervals at four to six minutes at, around a hundred percent of VO two max can be.

So many ways to go. For zone one, just go walk, right? Most of the data there is gonna support eight to 12,000 steps per day. You [00:11:00] can go higher than that, but just keep in mind, at some point you're gonna see a little bit of a drop off. So if you're at 15,000 steps per day and you go to 25,000 steps per.

You might see some benefit, but it's not nearly gonna be as much as going from 2000 steps a day to 12,000 steps a day. Zone due training I think can be useful. I

like doing it. If your aerobic base is very low in terms of a dedicated block of aerobic training, still do some weight training during those times, two, three days.

A good buddy, Luke Lehman from Muscle Nerds calls this the least mode which I would agree with, but once you've developed that good aerobic base, then yeah, leave some aerobic training in. A classic one I use is Tuesday, Thursday, Saturday. Do some aerobic training. For most of my clients. Who are more on the strength and power side, weightlifting, even just trying to add, body mass or lean body mass muscle, 20 to 30 minutes Tuesday, Thursday, maybe Saturday for most people is gonna be [00:12:00] enough to keep some of those aerobic adaptations.

I don't think you're gonna get tons of benefit from continually doing zone two training all the time.

AMA question two of 'em. From Dr. Scott Hope. How would you recommend to train clients with long haul Covid, or how would you train clients for pots? So I'll answer the POTS one first. POTS is something called pastoral orthostatic tachycardia syndrome. It's in short of condition that affects blood flow.

So these patients normally will feel very lightheaded, fainting, rapid heartbeat when they stand up from a reclining position. So if we think about mechanically, what's going on in a normal. Response. If I'm seated [00:13:00] and I stand up really fast, my blood vessels and heart rate have to correlate to make sure my brain is getting enough blood flow.

Therefore, oxygen, you will see an increase in heart rate cause we need to get more blood flow around the body and the blood vessels will ride this fine line. They need to dilate a little bit to accommodate more blood flow. But they can't massively dilate too much or else there's just not enough, what's called mean systemic filling pressure, not enough volume of fluid in the system to accommodate that.

So years ago when I was doing my PhD, I did some work on fmd. So flow needed dilation, we would occlude on the lower. , we would stick an ultrasound on the brachial vessel in the upper arm, and once we would remove this occlusion, which we normally had on for five minutes, you would get a massive amount of blood flow that would rush [00:14:00] into the vessel when the vessel sees a lot of the sheer stress on the side of the walls.

That's a cue for it to dilate. You've heard of like nitric oxide and all these other local factors are released. We would then with ultrasound measure how much the blood vessel dilated. So this gives us an idea of the endothelial working capacity of the vessel. And this was theorized to be a surrogate marker for maybe some of the vessels on the.

So if you have a heart cardiac system and the vessels are not dilating the way that they should, you're gonna be in a world deferred at some. One of the studies we did with that, we wanted to compare this sort of mechanical dilation effect to a chemical dilator. So we did this in the gcrc, so general research center, which is at the University of Minnesota at the hospital there.

And we would take a nitroglycerin as [00:15:00] part of the study would be the chemical dial. You've probably heard of nitroglycerin as a cardiac med for angina, so for heart conditions, and it is a massive vessel dilator when we're doing the study. I was one of the participants, I wasn't running this particular study.

We're in the hospital bed, we've got all this stuff hooked up. They give you the nitroglycerin under your tongue as part of the study, and then you wait for it to take effect. It's usually pretty fast. And I remember lying there just thinking, Oh, I could just feel my blood pressure drop. And in thinking, Oh man, if there's like a fire alarm or something going on here, I am gonna be in a world of hurt.

Cause I think if I took one step, I would just be faceplant right into the tile. You could just feel all your vessels dilated and you could just feel that drop in blood pressure. Again, I wasn't really that lightheaded because I was lying down. [00:16:00] But I had the sensation of if I got up and my heart rate has to work really hard, those vessels stay expanded.

My heart rate can't make up for that fluid in the system, and there's not gonna be enough perfusion to my brain. Your brain solution is, okay, let's not fight gravity. Let's get as level as we can, and you're gonna pass out and hit the. with pots, it's a little bit similar to that. When that they stand up real fast, they get lightheaded because of the control mechanisms in it are not working so well.

So this is theorized to be related to the autonomic nervous system or some type of autonomic Dyson, right? So the condition. Where your body is just not coordinating these thi things as well as it should. Usually what with this is that these patients tend to be very exercise intolerant and a little bit too much exercise can put 'em over the [00:17:00] edge.

They become dizzy or lightheaded. Unfortunately, it's a double edge sword, but because of the condition, exercise generally is quite difficult for. . So they tend to be very detrained at the same time. So my bias on that is number one, work with a good clinical neurologist to try to assess the pods condition itself.

There's different tests, there's different procedures that they can do. I'm an associate professor at the CAR institute, so you can go on their side. You can find a lot of education for that. They do a lot of education for functional neurology or clinical neur. So that would be my bias to find a doctor who's well versed in that and then work with them on the exercise component.

I've worked with a few patients in conjunction with a clinical neurologist, and we just start with generally a rower or a bike and very low levels of exercise and we want them to [00:18:00] stop before they have any symptoms or side effects or lightheadedness or anything. And then we'll monitor them day by day using heart rate vari.

So in the morning we're using heart rate variability to give us an idea of feedback from their body to see, Ooh, did we push them a little bit too hard with exercise or. , Are they doing okay? Now, again, it's not necessarily perfect because of their condition. Lots of things can affect their autonomic nervous system, but what I found is if you go really slow, right?

So some people are literally gonna row for 30 seconds at a pretty moderate pace. That might be all they do that day. We'll check their heart rate variability. Oh, looks like it's pretty good. All right, so we might go 30 seconds again the next. And the goal over time is to build them up in exercise capacity.

Tricky part is you can't really do a lot of max testing. I've noticed with the handful of these patients I've worked with [00:19:00] because they do tend to get very symptomatic and they are a little bit easy to push over the edge. Whether that's because of the disease process itself or because they have generally a low aerobic base.

So I find monitoring with heart rate variability, making sure we're slowly increasing the amount of cardiovascular exercises where I would target first. And the goal is that hopefully over time the body can learn to reregulate some of these mechanism. And especially as they're doing other things with the clinical neurologist, again, based on the research, that would be my bias as to what direction to go in terms of long haul covid.

Right now, I think all of the one on one clients, M3 clients I have had Covid at one point or another. Some of 'em have had it a couple times. . What I generally see is in not all cases but in quite a few cases that [00:20:00] appear to still be lingering there aerobic levels, aerobic base levels are very low.

There is at least one study I know of, I'll try to link to it that's been published on that. I don't know if it's because of the disease process itself, the virus or. That normally when you're more symptomatic, you just can't really do much of any exercise during that time. Your activity level is less.

My guess is it's probably a combination of both. So for those people, once they're cleared by their dock, they can able to do exercise again. I would consider running an aerobic base protocol to build that back up again. talked about this in another ama but start low relatively easy zone two stuff.

So if you can complete sentences, You're probably okay during the exercise itself. So as a marker for exercise intensity, there's ways you can look online to check zone two based on your maximal heart rate. Those on are [00:21:00] always super accurate, but they'll get you in the ballpark. I do like nasal breathing at this time also.

And in terms of time per week, Yeah, work up to doing, two to three hours per week of zone two moderate to easy work. . I like using a bike if at all possible. It's, there's not much eccentric load on a bike. I find that heart rates can be sustained there. Most people in my experience, unless you're an experienced endurance athlete, probably can't go light enough with running.

There's also a little bit more impact with it, but if you have experience running and you can get your heart rate low enough, that can be a method. Roaming can work also, but I tend to find, The output is gonna be a little bit too high. You can do something, what I call unloaded roading, rowing on a concept two, just take the damper, move it all the way down to the bottom, and that'll change the load or the drag factor.

So when you pull on it, it'll feel a little bit [00:22:00] lighter. Sometimes you can do that and get all the heart rate low enough to do it. Most of the times I find your heart rate's gonna be a little bit still too high, so I primarily like the bike would be my number one choice. , you don't really need anything fancy.

I took my old mountain bike that I had literally since high school, put road tires on it and stuck it on like a trainer, just a Kirk Kinetic, one fluid trainer, nothing

fancy. And then I stuck a Garmin speed sensor on the back that just pairs to my garment watch. So now I have an idea of distance and time.

It's probably not super, super accurate, but it's consistent from one day to the next. So now I know heart rate, how far I'm going, I've got an idea of a pace and time. So for long haul, Covid, again, once you're cleared by your doc, My guess is that aerobic training is going to be beneficial. It appears that there's an erosion of that, [00:23:00] and your aerobic metabolism is the base for everything else.

If your aerobic levels are really low, Everything else is gonna be a higher percentage of that max. All right, so the analogy I've used, if you have a v12 like huge sports car engine, I don't need to rev the RPMs real high to get performance out of it. If I've got a. Three cylinder Yugo engine, I'm gonna need to rev the RPMs relatively high to get the same output.

So higher aerobic base. Even if your goals are more strength focused weightlifting, strong man, CrossFit, et cetera, is gonna make all your other tasks easier, and your time to recovery I find is gonna be short. So that would be my thoughts for those.

[00:23:54] **Dr Mike T Nelson:**

AMA question. [00:24:00] What about low blood pressure and exercise? How would you deal with that? That one can be a little bit tricky. Obviously, you wanna work with your. Position on that. Make sure you're not becoming symptomatic or at risk of, passing out with heavy weight and causing any mechanical trauma.

I've worked with a few people who have reported similar things, and it's anecdotal, but what we've had pretty good luck with is increasing sodium levels and increasing fluid levels. again, Anytime you're gonna increase sodium levels, you wanna make sure that you don't have salt sensitive hypertension.

Just because you have hypertension, you may or may not be sensitive to salt. You can do measurements at home, you can get automated blood pressure measurements now, which is good. Talk to your doc and just see if you're in that category or not. But again, that would [00:25:00] be on the high blood pressure side.

In this case, you're talking about Lou blood pressure, and as I mentioned, Pretty good results with higher amounts of sodium and fluid. What I'll typically start

with is around a thousand milligrams of sodium per one liter of fluid. I do using Element, which is LM n t, so I am an affiliate for them.

So we'll have a link down below. You can just place more sea salt in water. But as you would expect, it tastes like salty water and consuming it and compliance can be an issue. I've tried to doctor it with a whole bunch of other stuff and me haven't had the best luck. So the thing I really do like about Element, and there are other brands out there, is that they make consumption of higher amounts of sodium pretty darn tasty, which is amazing in terms of amount, it's gonna vary.

The first question I ask is, do they salt any of their. [00:26:00] Then the assumption here is that we're dealing with someone who has a relatively low sodium background already. What I found with athletes who are eating mostly Whole Foods, not a lot of processed foods, is that their sodium levels appear to be low.

And when we've bumped them up performance tends to be a lot more consistent. Even with not being in super hot and human environments it is a little bit tricky. Everyone's gonna sweat different amounts. They're gonna sweat different amounts of sodium and different electrolytes. But again, if you're talking about a healthy population who doesn't have high blood pressure, I like going to hire on a sod.

I started doing that probably about three and a half, four years ago now, and I've just noticed in myself and with clients exercise performance in terms of consistency is much better. In terms of amounts. Again, it's variable. Total amount. I've noticed, three to six grams of [00:27:00] sodium per day, which I know seems crazy high.

But again, these are people who are generally metabolically healthy. They are eating whole foods, so their background of sodium intake is not real high. Again, I wouldn't recommend that the average American whose sodium is real high, their butt looks like a couch cushion and they don't exercise that they need more salt.

No, they probably have more than enough sodium. They just need to drink water instead of whatever else they're drinking. But for athletes, I found most more sodium can be beneficial. Especially if the blood pressure is quite low. So we've done this on a few people and symptomatic wise, they've done substantially better.

So I would play around with paradoxically more sodium. One side note is if sodium levels have been really low of. For a while, as you switch over to higher sodium, you can notice some temporarily, like puffiness or even frank edema as your body is trying to sort out more fluids and [00:28:00] sodium levels.

So usually that lasts in my experience. Yeah, three to four days, sometimes a couple weeks in extreme cases. And then after that it figures it out and you're fine. Not everyone experiences that. But if your sodium levels have been super, super low, your systems like the Renn, Doone, angiotensin system and these systems that are designed to keep homeostasis, they get super, super sensitive cuz they're like, Hey.

We don't have much sodium around, so we need to retain as much sodium as we possibly can. And then when you start loading more sodium in it, it takes a while for those systems to then reregulate and hit another base. So I would consider playing around with higher amounts of sodium.

Anecdotally, in most cases we've seen that does help. And this is bumping up your mean systemic filling pressure. So you're having just a little bit more blood volume. Also, Which can help in those cases. And let me know how it [00:29:00] goes for you. And again, if you're looking for, there's different electrolyte supplements on the market.

Now, again, my bias and favorite is element cuz it is higher sodium and it's very tasty. You can find the link below. And I am an affiliate for them, so I do make a little bit of money off it, but I've been using them now for probably like four plus years, and it has been really beneficial.

Thank you so much for listening to the podcast today. Thank you so much for all of the ask me anything questions. Really appreciate Helps me answer questions that are specifically ones that you would like. Answers to. You can submit some at the forum, you'll find your favorite podcast reader or on the website.

Below here, I would love to hear from you. I'll do my best to answer your particular questions. So podcast today was brought to you by the flex [00:30:00] diet certification. Go to flexdiet.com. F L E X, D I E t.com. To learn all about eight different interventions. To maximize performance strength. And better body composition all without destroying your health in a flexible manner.

Go to flexdiet.com for all of the details there. Thank you so much. Once again, for listening to the podcast, I really appreciate it. I hope to hear from you soon.

If you found that this one was useful and someone, might benefit from the information. Please pass it along to them and you can also leave us whatever stars you feel are appropriate in the review. And we will talk to you next week.