Speaker: [00:00:00] Hey, what's going on? Welcome back to the Flex Diet Podcast. I'm your host, Dr. Mike Nelson. On this podcast, we talk about all things to improve performance, add muscle, improve your body composition, do all of it in a flexible framework without destroying your health. Today on the podcast, we've got a good buddy, Dr.

Kenneth J. He is a PhD in physiology and biomechanics. He has helped coach different Olympians. He's the founder of the Row Forge app and many other wonderful things. So today on the podcast, we're talking all about cardiovascular performance, how to amp up your aerobic performance. Dr. Kenneth j was one of the expert lecturers, I guess you could say, for the Flexible Meathead Cardio Course, and I love this interview so much that I decided to put it out to the public [00:01:00] also.

And for a short time period only the Flexible Meathead Cardio course will be open once again. So if you are a meathead like myself and you want to improve your cardiovascular conditioning because you've realized your energy overall is lower and you've had a harder time recovering and you've done better on sleep and nutrition, you can't figure out what it is.

I am willing to bet a large amount of money that it is a lower VO two max, a lower aerobic performance that is holding you back. Um, I wish I would've tested this much, much sooner than what I did. So if you're interested in the course depending on when you're listening to this podcast, if you're listening to it when it came out here on Monday, May 26th and through Tuesday, June 2nd, hop onto [00:02:00] the newsletter list and I'll have all of the details there.

On how you can get into the Flexible Meathead Cardio course. We ran it once already. We're finishing up the final touches on it and the overall response and everything has been really good. And you don't have to be a dedicated endurance athlete to get some benefit from it. In fact, we have one protocol that is very short.

That has worked really well. So no excuses not to get better aerobic conditioning, and that's why I brought on my buddy Dr. Kenneth J. He is the first person who got me into using the evil contraption. They call the concept two rower, and many days I hate him for that, but overall it's been super, super beneficial.

So I wanted to have him come on here. And like I said, he is in the course also. And give us a breakdown on a cardiovascular training. So [00:03:00] in this podcast, we talk all about our love-hate relationship with the rower the science

behind rowing, and how he got into rowing his great book, which I'd highly recommend if you don't have called The Cardio Code, how Rowing compares to other modalities.

What are some of the pros and the cons of rowing? How do you do power output and train specifically for it? Everything from. VO two max. They're just a general cardiovascular performance. What are some good benchmarks to have when you're learning to row? What are some of the basics? Um, we even break down a bunch of different protocols, especially if you want to improve your 2K.

This is the gold standard in rowing. This is also what your VO two max will be based off of. And we even get into. Zone two training and its role and many other things. So I think I really enjoy this podcast. Um, also check out his app, row Forge. We'll put a link to that down below. If you're looking for a dedicated app and you [00:04:00] just want the kind of the how to and a basic assessment it's really good.

So I'd highly recommend you check that out. Like I said, if you want more information on the complete Flexible Meathead cardiovascular course. Hit me up via the newsletter. We'll put a link to that down below. Also looking for electrolytes, check out or sponsor element. And then if you're looking to power some of your rowing by using ketones, my bias is use some type of exogenous ketone ester.

It'll allow you to have high levels of ketones within a very short period of time. Don't necessarily have to do a ketogenic diet which is a time and a place for doing it for sure. But you will see a drop in speed and power when you do a very strict ketogenic diet because you are decreasing carbohydrates.

With the benefit of a ketone ester, you can get high levels of ketones without having to drop carbohydrates in your diet. So check out my friends there at [00:05:00] Teton Ketone Esters. We'll have hopefully a big announcement from them. I know I've been hinting at it for a while. Um, we've got a meeting there this week, so soon as it's public knowledge, we'll have all of that info to you.

I am biased because I'm a scientific advisor for them and an ambassador, so use the code, Dr. Mike to save some money. And without further ado, here is the interview with my good buddy, Dr. Kenneth J.

Speaker: Dr. Kenneth J., how's it going, man? Going great. Thanks for having me, Mike. Yeah, no, no problem. I wanted to make sure that we got you on here because you're probably the original person that got me to buy this horrible cardio contraption they call a rower.

Dr Kenneth Jay: Yeah.

Dr Mike T Nelson: Which I both I can definitely

Dr Kenneth Jay: agree with

Dr Mike T Nelson: that description of it. Oh, I'm very most days thankful when I'm not on the rower. And then when I'm on the rower, I'm usually not so thankful. That's usually how I think about it.

Dr Kenneth Jay: Yeah. Yeah. Pretty similar to me [00:06:00] actually. Yeah.

Dr Mike T Nelson: Yeah. How did you get to doing more cardio stuff before we get into that?

Like what made you pick the rower as the main modality? And I know you've done stuff with other modalities and we'll get into that too, but I still think the rower is probably for cardiovascular equipment, like the most. Underutilized piece of equipment, especially if you're primarily a lifter.

So let's say you're not necessarily an aerobic athlete. You're not going to do triathlons. I think for just the standard, I'll say lifting meat head, which I don't mean in a derogatory term at all. I just still think the rower is like way underutilized for aerobic and, just cardiovascular conditioning.

Dr Kenneth Jay: Oh, yeah, for sure. I totally agree with that. And it's probably because it sucks being honest. It was horrible. Yeah, it's absolutely horrible. So basically the roar has this, at least from my perspective, and it's like, it, it has this really, [00:07:00] it has this interesting combination of it requires you to generate a lot of force per stroke.

for every stroke that you take. And at the same time, there's a lot of muscle mass involved in order to drive that and get those wattages up there. So it also puts the strain on the cardiovascular system. But because each stroke does not take excessively long, you can easily sit at Whatever, 26, 28, 30, 32 strokes per minute.

So, so, so the turnover rate is fast enough to create that cardiovascular adaptation and you still get that sucky feeling from generating a lot of force for each stroke. So it's I think it's the closest cardiovascular modality comes close to actually lifting. And with the added benefit of actually doing something that's great for your heart.

Dr Mike T Nelson: Yeah, and, but the difference with lifting is that [00:08:00] you have very little afterload or pressure you're working against because it's so fast and at the end of the pull, right? So I'll just use simple terminology for people listening. So at the end of when I got the handle next to me at that point I'm almost weightless.

So there's this whole period of then returning the handle back where. I'm not doing any muscular contraction and that cyclic, that rate is relatively high too.

Dr Kenneth Jay: Yes, it is. Exactly. Exactly. So, so it's been some time since I looked into the original material from when I first got got into rowing.

But I initially got into it simply because simply because I started hanging out at the university, started hanging out with some of the people at the Danish National Rowing Team. And that's what sparked my interest in it. And I come from this whole thing, the whole kettlebell background and everything that goes within that and doing VO2 measurements with kettlebell training and all of that.

And I was looking for something that, that kind of [00:09:00] could bridge the gap between the extreme cardio, like long, slow distance stuff and the, this the really heavy explosive. Training and finding out is there a bridge somewhere in between because the whole thing about and one of my pet peeves, as you probably know, or you remember, we talked about this before, is that the whole idea of people believing that you just need a high heart rate in order to create a cardiovascular stimulus.

Just lift weights faster, bro. Exactly. That's actually initially what turned me on to writing. writing the cardio code book. It was like, I heard that phrase and I was like, I was getting ready to argue with the internet basically. And I said, Basically, screw it. I'm going to write a book. And then 36 hours later, I had like the first draft of that book is like, so, so there's a lot more that goes into [00:10:00] creating the cardiovascular stimulus.

But at the same time, I was also like, yeah, but I also want to preserve muscle. And I also want to practice rapid force generation and stuff like that. So what is the best modality? And as I see it, there's not really Another modality. Maybe

there's one other modality but basically the rower is probably the best thing that you can do.

The reason why I'm saying that may be another thing is that I'm also very infatuated by the Versa climber. I was going to

Dr Mike T Nelson: say Versa climber would be the one I was thinking of.

Dr Kenneth Jay: That has shown similar oxygen uptake measurements as the rower has. And we and again, for anyone who's ever been on that, they can definitely test horrible.

It's so difficult. It's crazy. Yeah. So, so a brilliant bridge between the force production it requires, but you can also put it on the [00:11:00] cardiovascular system and get those benefits. And again, if you look at rowers like from a. epidemiological standpoint and look at how's the physique of rowers, how's the heart health, how's the heart compliance, how's all of those parameters, how's the VO2 max, they pretty much check all the boxes of being in, like, in serious great condition with doing tons of rowing.

Dr Mike T Nelson: Yeah, I would argue that from, I basically would agree with what you're saying, from a physiologic standpoint everyone talks about now The hybrid athlete and how we need, some muscle mass and for longevity, right? It's vo2 max muscle mass slash strength grip strength is probably number three, which We could argue if that's a thing in itself or surrogate for strength But I would argue with you and agree that rowers are the ultimate hybrid athlete if we're only looking at physiologic response.

But yet they don't really seem to get any love in that area. Like you talk [00:12:00] about a rower as a hybrid athlete and most people would think you're like insane. They think of,

Obstacle course racing, running, and not to discount those things. But I think it's it hasn't gotten its due yet.

That's my thought.

Dr Kenneth Jay: No, and it also has well As much as I love rowing and all that it also does have some I wouldn't necessarily say limitations but things that you have to be aware of especially if you're going to spend excessive amounts of time on it because the downside is that and this is basically from a biomechanical standpoint is that the position to be in on a rower for like a

prolonged period of time, I'm not totally convinced that's a good thing over the course of a lot of training hours, at least I felt it for myself and I've seen it in others and when I speak to rowers who compete, Is that they have their stuff to deal with as well.

They have a [00:13:00] ton of problems with full hip extension, for instance. They have they have a tendency for like, stress fractures in the rib cage and their body, whatever. If we're going to get into the whole postural thing and all of that, it just seems like there's some sort of chronic adaptation to that position if you do it enough, but that's evident if you look at other sports as well, right?

Same with cycling. Yeah, same with cycling, basically. So, so it has, I don't know if we should call it limitations or whatnot, but it's definitely something to be aware of, that there's something there that's, that may need to be addressed in some way or form.

Dr Mike T Nelson: And what kind of I'm cut off.

Would you get for that? Because I think for listeners who are not familiar with people who train on an ERG or do a lot of rowing, just like people who are high level cyclists, I think it's hard to appreciate how many hours of quality work they're [00:14:00] accumulating per week. It's like, what would you give us a cutoff where like, Hey, if you're spending this amount of time or more per day on the rower, like watch out for these things.

Dr Kenneth Jay: Yeah, and that's, I know it's hard to say, I don't have a PubMed ID or anything for you in terms of this is just purely going to be based on my experience. Totally. I would definitely say that more than one and a half, two hours per week on that thing. You should probably start to pay attention to what's going on in your hips and your lower back.

How's your pelvis reacting to being in that seated position? And stuff like that. That seems to be where, at least for me personally and for the people that I've trained, that we start seeing a bunch of other issues arise.

Dr Mike T Nelson: Yeah, and that's my back of the envelope calculation too, is that Once you start getting to be more than 20 minutes [00:15:00] per day, every day of the week, then I'm like, okay, now we got to start just like I would with a cyclist.

Right. So, cyclists, you've got some hip issues. You definitely have some thoracic T spine issues. You need to probably try to reverse. But again, I think

most people listening, the reason I asked that question is I don't want to give them a reason not to do it because they'll be like, Oh the rower has these bad adaptations.

And I'm like, yeah, but girl, like, You haven't been on the rower yet. You've done zero minutes on the rower.

Dr Kenneth Jay: Yeah, and you also got to remember is like, I don't think we can come up with one activity in the whole strength and conditioning realm that doesn't in some way or form can create bad adaptations.

Oh, correct. Right. So, so it's like that with all of these things. It's just a matter of being able keep a track of them and know what to do so they don't become a major issue. But it's like actually one of my, and I know I'm, I don't know if I'm jumping the gun here and you have that as a question or anything, but one of my absolute [00:16:00] favorite protocols to do on a rower is actually, it takes 20 minutes to do right.

And if you do it the way It's intended to be done and the way I do it with with my clients then you don't do that more than twice a week.

Dr Mike T Nelson: So I'm almost a hundred percent sure I know which one you're going to go to, but tell us.

Dr Kenneth Jay: Yeah. So, so basically it's a very simple one minute on one minute off thing.

And you do repeat that for 10 rounds. So, so, and of course the intensity has to be way up there where it really sucks from pretty much the first interval. So, so the one on one off and repeated for 12 or for 10 rounds that takes a total of 20 minutes. And if you do it right and would do it with that intensity, number one, I haven't seen it costing any muscle mass.

Actually, I've seen it to, in some way or form, at least be a part of keeping [00:17:00] muscle mass, even during dieting and stuff like that. And it's not gonna. be an issue because for those 20 minutes, you're actually only rowing 10 minutes total. And during that one minute, when you're resting, you can stand up, you can do a few, some hip mobilization, you can work on your T spine if you're not throwing up.

And, or at least you can stand off and get off the rower. Yeah, you can move around. You can move around. Yeah. So that's absolutely one of my favorite go

to protocols. It's actually a protocol I use with my UFC fighters as well in, in when the time comes for them to really prepare within the first or the last three or four weeks before a comp before a fight.

So.

Dr Mike T Nelson: Yeah, and if you details on that, then maybe we agree on this. Maybe we differ a little bit is where would you have someone start out on that? And then what would you. Say would be an allowable power output drop from round one to [00:18:00] round 10, because here's what I've seen on the internet. Right. And I've seen some people come to me this with, they'll be like, Oh, I heard this podcast with Kenneth J.

He said like 60 seconds on 60 seconds off. That's amazing. 10 rounds and do their four lines of pre workout and they go out on the rower. But if you look at their power drop from round one to round 10 is like astronomical. Like, did they do the thing? Yes. Are they going to get some effect from it? Of course, they're going to get some effect from it, but they're not at either.

They picked a power level that's way too low or they picked the wrong level or they're just, they're not at that level of conditioning to do high quality work for 10 rounds, which is way different than just completing.

Dr Kenneth Jay: Oh, yeah, for

Dr Mike T Nelson: sure.

Dr Kenneth Jay: For sure. So, yeah, so I guess what you're asking is what kind of power output I see is acceptable from the best to the worst round?

Is that what you're asking, Mike?

Dr Mike T Nelson: [00:19:00] Yeah. So, like, I always equate it to if you do a 60 second wind gate, right? And we say this is, you're warmed up, you're ready to go. This is your absolute all out, round you can do for one round. So the first question would be, where would you start someone maybe off that set point?

And the second question would be at what point does their power drop off from say round three to four or five to six or six to seven becomes so great that they're just accumulating a whole bunch more fatigue now, and they're not really getting as good of a training stimulus.

Dr Kenneth Jay: Yeah. Okay. See if I can unpack that a little bit.

So, so, okay. So from the starting, we can talk about starting from a one minute wind gate all out, but that's not usually where I have people start.

Dr Mike T Nelson: Or where would you have them start? Yeah.

Dr Kenneth Jay: So I would actually have them start with, if we're doing anything where it's a structured training plan and they're not just getting on it and doing [00:20:00] whatever, but we're actually

A structured plan that's going to take them somewhere. They never just do a one minute on, one minute off for the first time without having any type of set base. So there's always a test and the test that I use is the 2, 000 meter, right? So it that's like the baseline test. And I'm Ever since I started rowing, I've always gotten into conversations with other rowers and stuff like that because I'm very much I'm very much intrigued by what is the wattage, what are we looking at in terms of the wattage and not so much the pace.

The it, the pace is an expression of the same thing. But whenever I talk about rowing and. Setting like an intensity. I talk about it in wadded in Watts.

Dr Mike T Nelson: This will be your output. Like what are you able to do as you're doing the thing?

Dr Kenneth Jay: Yeah it's the truest form of power measurement because power is literally measured in Watts.

Right. [00:21:00] So, but I actually, whenever it's always a 2000 meter test, and if we're going to go into. to take it from the 2000 meter test and have them start on a one minute on one minute off. I actually have them target their 2000 meter average wattage for the intervals starting with interval one, right?

So they start. Let's say they, they do a 2000 meter test and they hit 300 Watts on average, that's going to be their target for as many rounds as they can from one, two, three, all the way up to 10. And what I usually do is that whenever, sometimes a person will be able to hit that. That 2000 meter wattage for all the rounds.

And sometimes they won't in the cases where they won't. I look at how far did they [00:22:00] get? I look at, did they start dropping at round four or was it

round five or was it around six, seven or eight? Where was it? And I'm if you can't complete the first seven rounds, we subtract 10 to 15 Watts from.

The from your target and then we do it over again for the next session. So seven, seven rounds of that is my breaking point for that. If they can't reach that, then we started them out too too high. If they complete all the 10 rounds and they may overshoot a little bit, then I basically go, okay, what's the average Watts across the 10 rounds that you just did?

And it may be whatever, let's say three 10 or whatever. Okay. Three 10. Plus two to 3 percent is going to be your target the next time. So that's how I progress it. And it's purely [00:23:00] based on my experience and I would love to hear what your experience in, in, in this realm of how setting it. It works with your clients, but that's purely from my experience.

That seems to get people started without them dying way too soon and having that huge drop off. I know I've been probably been quoted in the past of saying like a maximum of a 20 percent power drop from the best to the worst. That's where I put the limit. And I'm yeah, that's probably okay.

For some people I, and I can't really put my finger on what it is, but for some people at 20%, maybe too much and they should be stopped before. So maybe at around 10, but for other people at 20%, it depends on what the absolute wattage is. Are and how their VO two curve is in relation to the wattage, because some people are highly effective and [00:24:00] can generate a lot of Watts with a corresponding lower VO two and other people are highly inefficient where the VO two just shoots way up, but there don't really, they're not really getting the wattages that goes with it.

So, so I'm like somewhere between 10 and 20 percent probably is probably where from the best to the worst it would sit there. But yeah. Yeah. No, I don't know if that made any sense or I'm just an incoherent person rambling on now.

Dr Mike T Nelson: No I view that as the the, what I call it, like the fixed volume approach, we're going to give you something that's relatively attainable because we're looking at a.

A volume of stimulus, we're still going to try to have some metric of quality on it. So we're going to look at the average wattage over those 10, but I think of it as, we're going to allow a little bit more degradation because our priority is on volume, not necessarily the quality. And we're going to increase [00:25:00] quality over time where I do is.

And I have used that approach. What I tend to typically do now is, take their 2k. And if I have someone who is like an intermediate level, I will take the average from their 2k, have them do 60 seconds on 60 seconds off as one method. Cause I have some clients who are very numbers based, like you need to tell me exactly how much work time and exactly how much rest time or I'm not doing shit.

Right? So for those people, I will do a one to one ratio. I'll do only like about a 10 percent drop off, but I will give you air quotes, a wild card. If you're a little bit more trained. Meaning that if you miss once, but you can make up for it the next round, I'll let you buy, right? Because sometimes there's just a learning process of pacing and everything else and that type of thing.

And if they show me that they can make up for it the next round and only be of a 5 percent drop off, [00:26:00] cool. Then I know it was more technique or they spaced out or whatever. It's probably not a physiologic thing. Yeah. If people are Really missing on, I would say the short anaerobic end, I may take 10 percent off of their 62nd wind gate and then allow them basically as much rest as they, they want.

So if I know like their high end is just really missing, I'll have them start at a little bit higher average wattage, but then they'll be able to take much longer rest periods between, and then we just see how many of those we can accumulate. And then over time, we're gonna try to condense it back down again.

But with that method It takes a lot more time, the person has to be more intuitive, and they are doing a higher output, but again, your density is going to be a lot less. And again, I can't point to any literature that shows any one is. Yeah. [00:27:00] Good, bad, or different or anything between it. And so in my head, I'm looking at the personality type and then also do they have a really compressed window of time?

Like they're an in season athlete, like for the NHL or something like that. And I've only got like eight weeks. Oh shit. Right. Yeah. In my brain. I want to get them the highest wattage they can allow them more complete rest and hit that again, because I'm prioritizing the output over the duration. If it's someone who's just doing it more for health reasons, things like that, they're at an intermediate level.

Yeah, I may do 60 seconds on 60 seconds off, and I'm looking at like a 10 percent drop and then we'll just add volume over time. But now I can then look

at their thing and say, okay. Great, Bob. You got seven rounds last time of high quality work. Let's see if you can do eight or nine this week.

And they have an out of if they can't do it, they can't do it. And that's okay. But they still have that target. And so it doesn't [00:28:00] degrade from, round one was 300 Watts. And I love CrossFit. So round three, round 10 is either like 120 Watts or something like, ah, I did the thing, yeah. Gotcha.

Dr Kenneth Jay: Okay. Yeah. So I, Hey I totally agree in terms of. Of having what I'm hearing you say is that you allow more flexible time in terms of the recovery. If you're prioritizing the higher power output, is that yeah. And that that totally makes sense. So that kind of falls into more of a, falls into more of like an anaerobic production training stimulus category, whereas a one minute on one minute off.

For most in the beginning, it's very much production, but as you progress through it, it becomes more of a tolerance thing, basically and again, if you're, personally, I'm from the perspective of if you have a, if you're well defined in that, either you need anaerobic [00:29:00] production or you need anaerobic tolerance or anaerobic capacity, then I'm probably more okay if you need more anaerobic tolerance than having a higher drop off on the wattage because we're going for that accumulation of, you want volume.

I want volume and I don't really care that much about the higher drop off. But again, if I'm in a phase where this is all about production, I probably wouldn't even go for a one to one work rest ratio. It would probably look a lot more like a one to three or a one to five, really. So, in order to allow the time allow time To recover the system and everything.

So,

Dr Mike T Nelson: yeah. So would you agree that like, if you do 60 seconds on 60 seconds off and you're doing it for 10 rounds, technically that's my little air quotes, you're anaerobic, but would you agree that as that test is progressing, that training, you're actually hitting more on an aerobic [00:30:00] system than you are anaerobic, and I know these are all like dimmer switches, and there's no exact, transfer point, and it's all a little bit vague to begin with.

Dr Kenneth Jay: I definitely think that an argument could be made for that simply because of the duration of the entire session and you've got short

Dr Mike T Nelson: amount of time to recover.

Dr Kenneth Jay: Yeah. So, and you're not really recovering your. You're not really returning all the way to resting baseline on your VO2, so it kind of climbs stepwise, right?

So, so if we look at it, and if I remember, and you may remember this better than me, but if we look at the oxygen uptake kinetics is that it used, it's very rare for someone to hit maximum oxygen uptake within the first 3, 4, 5 minutes. It usually takes a little bit longer, which is also. Something to be said for making sure that you're warmed up if you're going to do a VO2 max test, right?

Because I've [00:31:00] heard some stories about people doing a VO2 max test and they didn't really warm up and it was over in five, six, seven, eight minutes. And it doesn't really work like that because I've seen no warm

Dr Mike T Nelson: up, test was done in four minutes. I'm like, don't even send me the test. That's complete dog shit.

Dr Kenneth Jay: Yeah, and ask for your money back. Basically,

Dr Mike T Nelson: right.

Dr Kenneth Jay: So, because there's a time for the VO two max basically to catch up and recover or basically take over the energy that you already used anaerobically. So, so it climbs and you need to get to a point where this, if I remember correctly, so the curve is like very steep in the beginning with the oxygen curve, and then it flattens out and it's separated into two parts where we have the.

We have the fast component of the oxygen uptake, and then we have the slow component, which is that slow and steady rise over time. And you could probably argue that you're probably reaching a point where [00:32:00] you're bridging into that slow component of the VO2 max curve when you're getting close to the end of a one minute on, one minute off.

That, that would be my suspicion that you're getting into that. And that kind of fits time wise. Maybe you hit that slow component a little bit for before earlier, if you did it continuously, but because you have that short amount of rest, you don't drop all the way down in oxygen uptake and then you peak at another higher level and then down and up.

And then it gets smaller and smaller how much you drop off. And I think that could be indicative of there's a kind of a switch to the slow component of the VO2. At least that would be my take on it.

Dr Mike T Nelson: Yeah, I would agree with that. And the takeaway for the four people who are still listening is that there is no black and white.

So like in programs, like I'm fine giving out protocols because that's what people pay for and It's definitely super useful because there's an infinite amount of ways you could do this stuff. Oh, yeah. I [00:33:00] think once you understand the principle and the goal and like we were talking about like when maybe use more of a volume approach, maybe when use a higher quality work approach, there is no real right or wrong.

It's just different ways of doing this. Like there's multiple redundant systems in physiology. There's many ways. You can train to see an improvement if there's only like one or two ways, like, like we'd look at the sport of roaming and everyone would train the exact same way, and that's definitely not true.

Right. But I think if you understand. The principles, and you can make a good argument for why you're doing a certain thing. Hey, run that with your athletes for four, six, eight weeks. Test them before and after, see how it goes. Maybe you found something new that works really well.

Awesome. Meh, maybe it was just okay. Meh. Maybe it wasn't the best time to to use that. So there's never going to be a complete black and white, but you can probably, with good education and good protocols, get, maybe 70, maybe 80 percent of the way there. Which is much better than just, tossing darts at a board.

Dr Kenneth Jay: [00:34:00] Absolutely.

Dr Mike T Nelson: Yeah.

Dr Kenneth Jay: Yeah. Yeah, I totally agree, Mike. It's but yeah it's like, it, and this is, and I know, I think we're pretty much in sync on this, is that it's important to have a clear, like, You have it well defined of what you want to do and how you want to accomplish it.

So basically have a plan and having the answers to, I'm doing it this way because, right? So, and it may not be completely right, or it may not be 100 percent perfect, but at least you've put in some thought on to why am I doing it

this way? And what is it that I'm trying to achieve with it? So, for instance, When I'm training Nicholas Dalby is is a UFC fighter that I've been coaching strength and conditioning wise for getting close to 10 years, I think, and we're, he has like three or four fights per year.

And we've done a lot of different types of cardio cardio programs and [00:35:00] a lot of like. Training strategize training plans in order to keep him improving. And it's like for him and for a sport, like for a sport, like MMA, what he does, he needs to be able to go three rounds of five minutes, and then there's this basic.

understanding of, okay, what is that going to take? He needs to have some muscular explosive endurance. He needs to have a cardiovascular system that's well developed. So, so he can, whenever he gets a time to rest, he can re oxygenize and do all of these things. And he also needs to be able to tolerate a really acidic environment in, inside of his body, stuff like that.

So we have it planned out very much. Using your terminology is like we do whenever we do the sprint intervals in his preparation, it's always the, it's always the quality work first in terms of building, like trying to improve on the engine, how much. How much [00:36:00] wattage can he put out? And then as we get closer into transitioning him into closer to the, to fight day, we, I transitioned him into more of the volume work.

And then I allow for a bigger drop in his wattage. And that seems to be working really well. for him. And of course we also do a bunch of basic VO2 training and even some zone two training, but that's further away from whenever he's fighting. So as closer we get, it turns more into an, what you would call volume approach.

Maybe I call it anaerobic tolerance basically. But

Dr Mike T Nelson: yeah. Yeah. And would you agree with My argument with athletes is if I have six months to a year and assuming you're in relatively air quotes decent shape whether it's strongman power lifting mixed martial artists that's going to push in the envelope a little bit but my argument is that [00:37:00] Conditioning should never be a big weakness of yours.

If I have enough time to work with you in an intelligent manner, the way that the aerobic system response compared to lifting or even CrossFit athletes, my argument is that should not be your weakness where I could still argue, man,

extreme, you could just not, you could never be strong enough if you trained for two decades, right?

There's freaks that compete in all sports and it seems the amount of time it takes. To get really strong, even with drugs, like it just takes a long time, but I think you can get to a pretty high level of your aerobic system within six months to a year. I'm not saying you're going to be elite level at that point, but I think you can get to a pretty good level where it's not going to be a massive rate limiter.

And I still see in some sports, it looks like the aerobic system. Is still a limiter, which to me leaves me scratching my head, but [00:38:00] maybe I'm missing something.

Dr Kenneth Jay: Yeah I don't think you're missing something. I see the same thing is that it shouldn't be something that's lacking because for a lot of, for a lot of sports, it's, wouldn't say necessarily easy, but It's definitely doable to build and doable.

Dr Mike T Nelson: Not easy.

Dr Kenneth Jay: Yeah. Yeah. It's definitely do a doable thing to build enough of an aerobic base to have the capacity to do most things. Yeah. Right. Not talking tour de France or

Dr Mike T Nelson: not talking elite level endurance, but

Dr Kenneth Jay: No but most other things it's, it shouldn't be something that's lacking, but it probably Is because I do think that a lot of people find it boring.

And especially building that, that solid aerobic base where you just have to spend quite a bit of time doing an aerobic activity, I do think that a lot of people, especially people who gravitate towards lifting heavy or lifting [00:39:00] explosively, they gravitate towards that because they find that other stuff boring.

Right. And yeah.

Dr Mike T Nelson: Yeah. Talk to us a little bit about. If we're going to do a max assessment of VO2max, I think you would agree doing the 2k is still the gold standard on that. Would that be your recommendation starting point?

Dr Kenneth Jay: So, so for rowing, I haven't seen anything better than doing a 2k row.

My thoughts On the proper warmup leading up to a 2k that have changed over the years because I've been Maybe it's because I'm getting older. I don't know but and just in general need more time to warm up But

Dr Mike T Nelson: my warm ups have gotten a lot longer and my performance has gotten better But there are high level athletes that do that also too.

So maybe that makes me feel better Yeah,

Dr Kenneth Jay: that's true. But I do think that there is something to be said for something to be said for making sure that you're [00:40:00] properly warmed up and spend enough time doing it. And then for rowing, it's still the 2000 meter. And I haven't actually checked the literature lately, but I don't.

that there's anything else out there other than doing ramp protocols, which is also like a staple of the university exercise, phys lab where you do some sort of step tests or incremental tests in order to bring you to to that level. But it's a bit harder to do on a rowing ergometer really.

It's harder to control the and have a sustained output for each step. So, so whenever I remember back from school and you probably do this, remember this as well is that those incremental tests, they were usually done with you started out. After warming up, it was one minute at a fixed wattage, basically, and it was done on the old Monarch yeah, the bikes.

Monarch bikes and then it was increased by 30 watts or something like that each minute. Up [00:41:00] until you couldn't complete a minute anymore, and then you were hooked up to the to the VO2 equipment. It's a bit more difficult to do on a rower, because that instantaneous wattage, that fluctuates way too much.

So If you know a little bit about pacing and a little bit about like pacing strategy throughout a 2, 000 meter test, that's, that should give you a really solid number of your true VO2 for rowing. At least in, in my experience.

Dr Mike T Nelson: Yeah, that's, and I get some crap for doing this, but I have a metabolic heart here, which is great.

And in intermediate people, I've just stick them on a long warmup, which will put the metabolic heart on and make sure everything's working. I'll usually have

them do a longer, low intensity warmup. I'll use that to look at their, your fat metabolism, et cetera. And then I actually, if I'm not really trying to see what a limiter is by using Moxie or Knox or [00:42:00] something like that, there's different protocols they have for that.

I just have them do a 2k and people are like, Oh, but how do you do that? It's not a step function. And I'm like, Exactly what you said. It's hard to get a real step function on a rower. You can do it. I think it's valid, but it takes more effort. And if we go all the way back and we think about What is VO2 max?

It is the maximal volume of oxygen that's going through the system. I have a device on them that's literally measuring the amount of volume of oxygen going through them. So if I take the raw data and I look and I see that it goes up like this and then it plateaus for a couple minutes. Yeah, I feel pretty confident.

I found their VO2 max. Like I don't know what you want from the test. Exactly.

Dr Kenneth Jay: Yeah, exactly.

Dr Mike T Nelson: And then if the equipment all shits the bed, they still did a 2k that I can then use an equation to get a VO2 max from, so it's not like, all is completely lost at that point. Exactly. Yeah.

Dr Kenneth Jay: So having that corresponding [00:43:00] power output to the VO2max that, that's basically, that, that's all I, whenever I wrote, write individualized programs and go into a bit more detail about it, I just need to know that wattage basically, and that average wattage from a 2k, that can give you a lot of solid information on where to take the programming and percentages and figuring out what type of energy, what the energy system you want to hit and all of those things.

So the VO, the actual VO two measurements, it's great to have, and especially for nerds like us it's awesome. Yeah. But you don't actually need it to make solid progress. You can write everything off of the wattage. Yeah.

Dr Mike T Nelson: Yeah. That's. What I do. I take it initially to see like, okay, is a VO2 max horrible?

Okay. Or pretty decent. Right. And then from there, I'm like, that kind of gives me an idea of how much stress or what [00:44:00] level of intensity or what sort of things I can throw at them. If their freaking VO2 max is 22 compared to 41,

I'm probably not going to train those two people the same. But I agree with you that once I have that number.

I'm going to try to base everything off that number because the beauty is I can then tell them, Hey, I want you to hit these average Watts here. I want you to do about this duration. And you can use an output measure to determine what to do. Not a cost measurement like heart rate. I'll still record heart rate during it because I want to see what's happening with the physiology.

And I might sometimes just give people, okay, I want you to hit this rough heart rate after we have enough experience. And I know where they're at, but I still have them post the output, right? Cause I want to see the ratio between those two, because if heart rates accelerating and your output is dropping and this is happening day in and day out, Oh shit, you might be working in air quotes, the same heart rate range, but [00:45:00] something's going wrong.

Right? Oh yeah,

Dr Kenneth Jay: absolutely. Yeah.

Dr Mike T Nelson: Yep.

Dr Kenneth Jay: Yep. Yep. Yeah, totally aligned with that, Mike, definitely.

Dr Mike T Nelson: And so when you're programming, like, so, first off, I guess I should ask you, and I know what numbers you're going to say, but what do you think is an attainable 2k for people? So let's say you've got an average lifter coming to you, they're like, eh, I could work on my aerobic system, I don't really know how good it is.

They do a 2k test, you convert it to VO2 max. Do you have like numbers in your head where Yeah. To be a good lifter, to have, pretty good cardiovascular health, you're lifting three to four times a week, I think your VO, two max should be this number or your two K should be this number.

Like, do you have any sort of standards that you put people in? Or you just have so much experience. You're like, ah, that blows you need to be over here and do this.

Dr Kenneth Jay: That's probably what I'm doing now because I've given [00:46:00] that a lot of thought as well over the years and it's like, like, and I don't know how you feel about that but once you've been in this game for X

amount of years and It just comes to you intuitively on where individual people should sit.

You can when you've interacted with them for just a little bit and trained with them and you know also, and this might sound weird, but it seems like you can already gauge what their potential also is. In in, in terms of performance and not just on the rower, but you can already know beforehand where they're going to struggle in a deadlift and what's their maximal attainable squat is going to be somewhere around there.

Right. Yeah. Yeah. So you can gauge those things, but it's like, I if at least to try and answer your question, I'm if you're a male, and again, there's a difference between the rowing is also a little bit technical. So let's assume that you have the technical stuff [00:47:00] down and you're not necessarily a lightweight use like normal builds a bit well trained and stuff like that, I would like to see And you're, I don't know, 30s, 40s, maybe even into into the 50s, stuff like that.

I would like to see like a 7, somewhere between a 730, 745 ish at the minimum in a 2k. That's what I would like to see. And it's like, that's definitely good enough for them to at least have an aerobic base to build off of. Then we can get as soon as you get into the sub seven thirties and approaching seven minutes, then it's also going to take a lot more specialized training and time to get there and the last 10 seconds getting from 710 to seven and break that seven.

That's almost like another universe, too. Yeah, it really is. So I'm if it's not [00:48:00] the main focus, but it's just to do some cardiovascular make sure that the cardiovascular system is somewhat healthy, can have an aerobic base, short term, I would like to see a 730 ish. That's where that sits.

But there are going to be individual differences.

Dr Mike T Nelson: Yeah, that's where mine are at. Like to me, like the passable where, okay you're maybe okay. I give it like a, an eight minute 2k. Like if you're a big dude, passable, could you do better? Yeah. And I would say the next one would be 7 45. Yeah, that makes me feel better.

Like I feel like we can push your volume a little bit more. You're probably good. It's probably not going to be a massive rate limiter. And then I agree with you like seven 30 ish. If I go to the little bit upper echelon, not super high, but. At that point, your aerobic system is probably not going to be a huge limiter.

If you want to go [00:49:00] past that, we're definitely going to need to do a lot of specific programming. There's going to be a lot more involved. And then as you get, like, I had a guy, I think I'll put a case study up. He Brian, I want to say he started at, maybe I got these numbers wrong. 717 or 718 for a 2k.

And I think we got them to 710. In like eight weeks but he didn't do a lot of lifting and we completely fucking brutalized him and he was a pretty advanced athlete and he did it and then he promptly fired me and said, he doesn't ever want to do that again. And he's tired of the rower. Yeah.

Dr Kenneth Jay: Yeah. Yeah.

That's usually what happens because that sucks when you have to push that hard to make those improvements.

Dr Mike T Nelson: Yeah. Yeah. Yeah. So there's definitely a diminishing returns. At some point, too.

Dr Kenneth Jay: Yeah, for sure. For sure. I totally agree with that. And it's like for those people who go in that direction and they [00:50:00] usually, I had, I remember when I had to do, I, when I set my goal and wanted to see how far I could push my 2k and I really I started out Trying to do everything else that I did and quickly realized that's not gonna work.

Yeah So I had to start scaling back on other things in order to just be able to complete The necessary amount of work that had to be done in order to push the time Towards the seven minutes and beyond that and at by the end of it. It was like it was basically all I did Right. It was really specialization and everything else.

At that point that started to suffer from it, right? Because of course, if you don't do pull ups, if you, if I don't do military presses for three to six months, because I'm specializing in the rower, then I'm going to lose a lot on those lifts. Right. And I also lost some muscle mass because I spent so much time [00:51:00] on the road just to catch that extra second and get to where I wanted to be.

And that wasn't even maintainable. At some point, I also got really sick. Sick of it. And I didn't want to chase that anymore. So, so, and I can understand people that if they're pushed to towards that, and maybe even too fast and they get like really into it and they can get to a point where it just, I don't want to get on that rower ever again, because it can suck.

It definitely can.

Dr Mike T Nelson: Yeah. And would you agree, like, I think I got this from you, is that on the concept two side, if you're in the logbook for people who are, not an average size dude, bro, like you can look up like the previous year and you can go by age group, you can go by gender, you can go by weight and they'll rank 90%, 75%, 50%, 25%.

Yeah. And I think it was you were saying, and I would agree with this, that Most people on that metric, I wanna see 'em hit at [00:52:00] least 50%. Like I've had people test at like the bottom 5%, 10%. Yeah. I'm like, yeah, you definitely need to work on this. Yeah. Yeah. When they hit like 50%. Yeah. Most people feel pretty good.

Like to push to 75%. I think there's some benefit there, but you're starting to taper off, 75 to 90%, like you're in that. Pretty hyper specialized range where you want to do this as your number one thing.

Dr Kenneth Jay: Yeah, I, yeah maybe other people have said that as well, but that's definitely also one of my things is that on that, because there's so much data on the Concept2 website.

Yeah, it's amazing. Yeah, it's awesome. And I was okay, so if I'm like, we have the 50th percentile to the 75th percentile, basically from 50 to 75%, if you're in that range. You're pretty good. You're pretty good. And then we can, without compromising a whole lot of other things, we can push [00:53:00] towards the 75th percentile if you want to.

But going beyond the 75th percentile, basically in any of the distances, that's going to take. More and more, and it's almost like exponentially more work in order to break that 75th and go to 80 and then go to 85 and all of that. So, if you're there, then, then relax with it and enjoy life without killing yourself on the roar, basically.

Dr Mike T Nelson: Yeah. Cool. Let me just wrap up here towards the end. What, if somebody came to you and said, okay, I just did the 2k, I'm a 200 pound dude, bro. My 2k time was eight minutes and my goal is to get to, we'll say 730 with my intermediate goal to hit 745. I still lift three days a week. I don't want to go below lifting three days per week.

What would be just like an [00:54:00] outline or direction? Like, what would you have them do if that were the case?

Dr Kenneth Jay: In my experience a situation like that, or a person like that having that kind of a goal to get towards a 730 ish with a 745 in between, in my experience, that can be accomplished either with rowing a couple of 5ks every week, basically, at a, of course, at a lower intensity, I usually, whenever I prescribe 5ks, I usually, it's all based off the 2k average wattage, right?

So I would usually calculate 80 to 85 percent of their 2k and have them have that as a target for a 5k. And if they do that twice a week, it should be very possible for them to within a short time frame to be able with an with a taper and everything and then a retest to hit 730. It doesn't take more than that, but at 5k at 85 percent of their 2k [00:55:00] wattage, that's still quite a bit of work.

Dr Mike T Nelson: Yeah, that's that's up there. It's doable, but it's not like you're gonna hit that day one.

Dr Kenneth Jay: No, you're not gonna hit that day one. That's gonna be a target to work to work towards. But you don't need, you don't need intervals in order to do that. You can. You can I've also done it I've also taken people with a little bit higher volume again.

So 3 times 1, 500 meters or 4 Times 1000 meters and having those intervals sit at around 90 percent of the VO two or sorry, the two, two K watt max wattage or average wattage. And basically having him rest three minutes in between each interval that also seems to do the trick. So again, upping the volume and decreasing the intensity just slightly, and it still sucks and you're still gonna sweat.

And then probably my [00:56:00] favorite one because I don't know why it became my favorite, but I like mixing things up. So I have this protocol where it basically starts out with a hundred meter sprint.

Dr Mike T Nelson: Yeah, and give us the name of that one. Cause I, this is like. Probably my favorite program from you that I've used all the time and everybody hates it, but holy shit Does it work really well?

Dr Kenneth Jay: Yeah, it's my favorite as well. I actually I changed the name of it at one. Oh, you did Yeah I did. So right now, I refer to it as Mjolnir, so Thor's hammer, basically, so that, but, and I can't even remember what I named it to begin with when I first started posting. That's the name I had, so. Yeah, I it had a different name in the beginning.

I'll see if I can find the name for it, but I think I, I think it was all Avengers based or something. I had to give it that name. Basically because it's the, In my opinion and basically it's the program, one program to rule them all, basically. [00:57:00] It's a 100 meter sprint, pretty much all out.

It's a 200 followed by 30 seconds of rest. Then you go 200 meters, turn down the intensity slightly.

Dr Mike T Nelson: Yeah, so like, I think if I remember right, 150 percent of your 2k average watts.

Dr Kenneth Jay: Yeah, and then the 300, then there's another 30 seconds of rest, and then you have a 300 meter where you target your 2K average wattage, and then a 400 meter after another 30 seconds of rest where you target, I believe it's mid 80% or something like that.

Yeah, it was 85%. Yeah, and then you have a five then you have another 30 seconds of rest and then you have a 500 meter that sits in the 70s So that's a recovery so that was actually calculated based off if you average out the intensity the intensities for each interval And adjust for the length that you [00:58:00] do each intensity when you complete those 1500 meters Then you'll actually have completed those 1500 meters at your wattage for your 2k Right, and then you get three minutes of rest and then you repeat the whole thing and it goes up to five rounds So that's seven thousand five hundred meters.

And if you complete that with The prescribed intensities and you can pretty much close to all of them throughout the five rounds you've done 7, 500 meters with very little rests at your at the wattage that elicits your vo2 max And when you can do that, then you should recover and then retest your 2k because you're gonna blow the old one Out of the water basically.

Dr Mike T Nelson: Yeah. Yeah, that's like my go to if somebody says hey we've got most of their stuff dialed in, like, I really need to up my 2k and we've been doing, 1k is at a certain pace or [00:59:00] doing like a 20 minute capacity roll or a 5k and then, they make, pretty good progress.

Jodie: Yeah.

Dr Mike T Nelson: The caveat I give with them is. We'll do this. It's going to be about six to eight weeks. Yeah. I find I have to usually sub it in on a lifting day. So if they're lifting four days a week, they'll have to drop to three. So this'll take the place of one of their lifting days, just from a stress thing.

And the only change I made was. I give them up to six minutes of rest between each one. So I allow the rest period to go a little bit longer because I want to see if they can complete all of them first. And it seems to work really well because it has that built in check of percentages at outputs, right?

So if you can't, sometimes they can't make it. It's like, great. You only did two rounds of the prescribed three. That's okay. We'll start again at three next week. Yeah. And I usually just add one round per week. Yep. Right around three or four, I might give them two weeks there. Cause that seems to be the tipping point.

But yeah, once I can do that and hit all five [01:00:00] rounds at the output then that's, I know for sure, like they're significantly better than before. Yeah. And they usually by week one, they'll be like, I don't know what you're talking about. That wasn't so bad. Week two, they're like, okay, two rounds. Yeah. I see what you're saying.

Okay. Week three. I really hate you. This started to really suck this week four. You're an a hole. Why am I doing this? Why am I paying you an obscene amount of money week five? You want me to do what are you talking about? Yeah, exactly. Exactly.

Dr Kenneth Jay: Yeah. For some reason that protocol is probably the one protocol that I've had the best results.

With the fastest both with myself and my clients when the exclusive goal was to improve the 2k, The 2k time and hopefully also thereby improving vo2 max. That's definitely but I also realized Down the road that, that it's like, there's a lot of recovery necessary. Once you hit those four or five rounds, [01:01:00] you can't do that.

You can't do that workout three times a week. That's way, way too much.

Dr Mike T Nelson: It's like people do it once a week. And in extreme rare cases, I think I've had two people ever do it twice a week. And they weren't doing much else.

Dr Kenneth Jay: Exactly. Yeah. And that that aligns with what I've found as well is that both of myself and others is that do that twice a week, and you may have to compromise other things as well, but in the matter of four to six weeks, we can definitely take the 2k performance way up there.

That's definitely also my experience with that. So definitely a go to. And one of the things that I really do want to mention, and I love to hear your take on is that the reason. One of the reasons, apart from the physiological stimulus, the VO2 and kinetics and all that goes with it, it's like, it's broken down into doable segments.

So it's like you sit on the rower and okay, so it's a hundred meters. Yeah, I have to sprint, but I [01:02:00] get to rest very shortly. And then I only have to do a little bit longer on the next one. So it's it allows you to focus basically on one thing at a time. It's if you're out, I remember this from back in my military days, when we were out doing the long marches and stuff like that, if you had to think that you had another.

30 or 40 or 50 miles to go. It was like, it was so depressing. It was like you wanted to quit and this sucks and stuff like that. But if you could see something in the distance and say, Hey, I just need to get over there. And then I'm good. Right. And if you could do that repeatedly. So you break off the distance into smaller parts, then all of a sudden things become doable again.

And I think at least for me. I can sit on the rower and do that protocol and at the end of it and completing five rounds, like that's 7, 500 meters and I'm toast, but I didn't get bored and I didn't get to the point [01:03:00] where it was like, this is just one long, grueling, intense death march. At least that's how I think about it.

And I, I don't know if you have any thoughts on that. I would love to hear them. Yeah.

Dr Mike T Nelson: Yeah. Because. When I first got up to, it's probably been two years was the last time I think I got up to five rounds on it. And I remember the first time I ran the calculation of the total wattage, I was like, I got 7, 500.

No way. I can't believe I did that much. I was guessing, 5, 000 or something like that. Cause it, it felt horrible when you were doing it, but because of those breaks and the way that it was set up. If you would have told me just to go out and row 7, 500 meters, I'd be like, screw you, I'm never doing that.

And, I've also realized, like, for Myself at different times and for clients, if you're really good at the power, you get to do something you're really good at, but even that 500 meter, if you're anaerobic base or aerobic base or whatever, you're not as good at those longer distances, even [01:04:00] after around two or three, the 500 meter can suck where if you're wired the other way, there's some

people who miss the top end rounds because they're missing that end and the 500 meter is just like a walk in the park.

So it hits. Both ends of the spectrum, too, from a training perspective.

Dr Kenneth Jay: For sure it does. I'm glad you find that as well. It's like, because that's one of the, and I've been in that situation before is like 7, 500 meters or even a 5k or a 10 K like just one long. grueling death row basically, right?

It's like that's not gonna happen but breaking it down into these components and because I'm also more inclined to, I'm definitely not an endurance guy. I'm way more explosively oriented myself and like those shorter bursts, but also recognize the importance of being able to do something for a longer period of time.

[01:05:00] When I designed that, I was like, okay, how am I going to accumulate some volume and still draw on whatever I'm personally good at? Right? So that was like the idea of it. So I wanted to leverage, I wanted to leverage the high intensity, but I didn't want to disregard the the overall aerobic benefit that it has.

Yeah, so that's definitely one of the good ones.

Dr Mike T Nelson: Yeah. Awesome. And last question, which is a two part question. What do you think is the role for zone two and how would you program that in? And then related to that, it seems to be the trend, and maybe I'm just misreading social media, that if I just do zone 2 stuff, I'm good for maintenance.

So like, what would you say is like, hey, I got to my, my 732k. I'm fine to let it erode a little bit. I know I'm not going to stay exactly there, but I don't want to be so like, in my case, [01:06:00] I don't like to be ever more than four to six week out from my absolute max 2k. And if you showed up in my house and said, Kenneth, I'm going to come test your 2k and I'm going to test you in six weeks.

Oh shit. I know I could hit it in six weeks. Right. Cause sometimes you get so far away that it's like, bro, give me six months and I'll make it,

Jodie: yeah.

Dr Mike T Nelson: Like. What would be a good thing to do, for maintenance once you feel like you've hit that aerobic area that you want to maintain? It's a two part question that may or may not even be related.

Dr Kenneth Jay: Yeah, so, so that's the thing is like, I've, I'm going back and forth on this whole thing about the zone two and how it's become very popular in recent time, in, in terms of focusing almost exclusively on working zone two which definitely has its benefits and it definitely As you have a higher and higher level of of aerobic conditioning and [01:07:00] get towards that upper echelon of performance, then it becomes more and more important.

But I also do think that it's that, that for most people who don't necessarily. Work out a couple of hours every day Then they should probably gravitate towards doing a little bit more high intensity stuff Because if you do have time to recover from the high intensity stuff Then there is more to be gained from that in my personal opinion So I usually say and I put it a little bit out there on, on the line and I will probably get some critique from saying it, but I'm If you're doing cardio training six, five, six, seven hours a week, then a lot of it should probably be sewn too, or some of it should be sewn too.

But if you're sitting at, you [01:08:00] have like a 20 or 30 minute window and you have that two or three times a week, I definitely think that I'm almost going to go out on a limb and say, you're wasting your time. If you sit at And hover around zone two, if that's all the time you can allocate to your cardiovascular system.

But having said that I'm, I still like zone two for the people who have a lot. More going on because most of the people that I work with, they use strength training and cardiovascular training in the gym. That's not the goal in itself. The goal is to become a better MMA practitioner.

The goal is to become a better. Sports athlete of whatever sports so, so they do it as supplementary and supportive training around that and when you have someone who does a sport also maybe four times a week for a couple of hours, then it's probably not always a good idea to [01:09:00] blast them with the high intensity stuff and that's where the zone two for me comes in.

Even in my own training, I've changed my training approaches over the last couple of years. I've gotten back into martial arts training, I'm back doing karate three to four times a week. And and I'm back with the kettlebells and the sandbags and I'm realizing that I can't do the high intensity cardio on top of all that again, that frequently.

So I do the zone two stuff as well. So basically for me, that's 70 percent max heart rate. And then just for a prolonged period of time. That's my zone 2. And I'm rambling on here and I think I forgot what you initially started out by asking, Mike, so

Dr Mike T Nelson: Yeah, so, I'll get back to the final question.

So my take for people who are limited on time, who are already lifting is I actually push a lot of what I call cardiac development, like zone three, do it at a high enough intensity where it's not going to be true [01:10:00] high intensity stuff. We may include some intervals in, but they're going to be very short and very brief and you don't need a lot of it.

Like if you're doing like zone three cardiac development stuff and you're a lifter. I would argue even 10 to 15 minutes, like five days a week, you're going to get a huge return on your investment for that short period of time, way more than you would have zone two. Yeah. And at some point as you're progressing, and if you hit a plateau, yeah, at some point we may need to step back and build a bigger base, the pyramid you may have to do.

And I've had people do this six to eight weeks of zone two stuff, get the base kind of build from there. But I would agree that I think. And you're starting to see a little bit of backlash now of people that are like, Oh, I sucked it up. I did my three hours of zone two this week, and it's been six weeks.

And I don't feel a lot better. It's like, did you do anything other than zone two and lifting? No, they just said Zone 2 was gonna fix all my issues. I'm like, oh, no. No, definitely not. [01:11:00] Yeah.

Dr Kenneth Jay: Yeah, so I think there's I don't Maybe I don't follow what's going on.

Dr Mike T Nelson: You're probably better off. I try not to, but I just get lots of crazy questions.

Yeah.

Dr Kenneth Jay: So, again, I definitely think it has its place. And for those people who really spend a lot of time and have that high that really wants to focus on the aerobic side of things that then definitely true zone two has its place I've seen I've actually i've seen and this is interesting because i've also seen a draw towards like Lower is even better.

I've seen some people define zone two as 50 to 55 of max heart rate and just spending even longer time there and getting towards that i'm What is really the point of that is, is like, is that actually doing something? So what I actually like, like to do as well in order to find some happy medium and that actually, it's interesting that you say that about zone three, [01:12:00] because that kind of corresponds to what What I've also been working with my clients and myself is that, that I usually look for either critical power or a 20 minute FTP level.

Yeah. Which takes you higher than the true zone two, but it doesn't take you into that really serious VO two max type of range. Right. Yep. And I actually think if we did look it up and ran some numbers and stuff like that would probably correspond to what you're saying. Maybe zone three, zone 3.

5 maybe, but around that. Right. Okay. And that seems to. Work really well with the people that I've worked with. Also because again, zone two is for the people who spend probably hours every day throughout every week. And for the average weekend warrior. You're probably better off increasing it up to zone 3.

5, [01:13:00] maybe, right?

Dr Mike T Nelson: Yeah, my, my argument on that is that most of the research on zone 2, at least the stuff that's cited a lot, and Sondra Milan has done a lot of this stuff, and it's great work. It's super valid, like really great stuff, but people forget that most of that work with zone 2 was done in pretty high level cyclists.

Yep. If you've ever worked with high level cyclists, they are psychotic. Right. So like you tell them not to exercise, like, good luck with that. Yeah. Like if you tell them to do zone two, then they feel like they're doing something. Yeah. I wonder how much of it at that high end is just getting them not to, pound their dick into the ground every day on the bike.

Dr Kenneth Jay: Exactly. And there's this whole thing about with, and I remember this from working with the Danish national swimming team and. Some of the teams as well is that if they elite athletes at that level, and especially when they are endurance [01:14:00] based, like you say, they really, they can't really go without a day without doing something.

God,

Dr Mike T Nelson: no.

Dr Kenneth Jay: And part of it is, I don't know. I'm not going to get into the psychology of that, but but at least from what I hear, and this is interesting is that they actually feel like. They lose the loose the feeling, the flow of actually doing the movement. I remember my swimmers back in the day, they said that if they take a day out of the water, they lose the feeling of the water.

Right. And I've heard other people at a really high level with not tour de France level or road cycling level, but high level mountain biking, because I've spoken to some of the they feel like if they don't ride and have the handlebar in their hands and move their body around the saddle and do all these things, they lose feeling, they lose touch with it.

So that may also play a part with that besides the [01:15:00] besides the ADHD that they have. Yeah. Yeah.

Dr Mike T Nelson: Yeah. And the last question was if someone hits their kind of their VO two goals and they're using the rower as their main mode, what would you give us a hallmark of, if you just do this per week, I think it'd be pretty good.

I think if I remember right, at one point you said, if you just do three or maybe it was two to three, five Ks on the rower per week, you're probably going to be pretty good, more than good for maintenance.

Dr Kenneth Jay: Oh yeah, for sure. So like maintenance rowing, 2 2 5k's per week, and not necessarily pushing it, but again, going back to that, maybe at a zone 3 level, you're definitely gonna be within What do you call it?

Within shooting distance of your of your 2k within four weeks or something like that, that can definitely be maintained personally, and this is just from N equals one I've actually maintained my throughout, throughout the years, if just by [01:16:00] doing the Mjolnir protocol, just once a week, that's been enough cardio of that once a week, but then that's also done pretty intensively, but that's been enough to keep my keep my VO two at that level.

And once a week, and that, that thing is over in 45, 50 minutes, right? That's that can be done. That for most people, and there's still time and enough rest and recovery and still being able to go lift and do other things.

Dr Mike T Nelson: Yeah. And that's what I found with, I'd say intermediate level athletes.

Like I usually have them left Monday, Wednesday, Friday, Saturday, Sunday is an unload day, Tuesday, Thursday is just off dedicated cardio days. Again, it'll vary a lot from that, but I've noticed that. Just 20 to 30 minutes of some moderate intensity stuff, like you don't have to bleed from your fucking eyeballs.

Like Tuesday and Thursday. If you hit like that 20 to 30 minutes, and even 20 minutes if some, moderately intense stuff in [01:17:00] most people, if you're lifting and relatively active, like I've noticed the same thing, like that's usually a good enough level to maintain where you're at.

You're not going to go up, but you're not really going to slide that far backwards from it either. So, which is nice. So it's not, it's just like lifting. You don't need, once you're at a level, you don't need that much. To stay there. If you're trying to break new ground, that's a whole different matter. But to maintain it, it's not because I think sometimes when you talk about cardio with lifters, they're like, Oh my God, I'm gonna have to do this huge amounts of rest of my life is sucks.

It's like, no, when you get to the level you want it, it doesn't take a lot to hold that level.

Dr Kenneth Jay: No. And again, at least for the cardio part of it is like what goes first is the anaerobic side of things. It's like a tolerance for that. So, and it's, so, and this gets quite, this can easily get quite nerdy, but the VO2 max and all of that is comprised of the cardiac output, [01:18:00] which is the heart rate, right?

multiplied by the stroke volume, and then it's multiplied by the oxygen extraction from the tissue, right? So the AvO2 difference, basically. So something is central and something is peripheral. And usually what happens when you go into that phase, you lose a little bit of the peripheral stuff that goes on the efficiency of with the mean transit time of the oxygen and all of that, but that can quite easily be pushed back up.

It doesn't need to take more than a two, three weeks to bring that level up again. And at the same time, you can bring up your lactate tolerance as well, quite quickly. And the central components of it with everything that goes on with the filling pressure of the heart and all of that stuff that can be, that's going to be maintained just by doing something like you're describing with a couple of 20 to 30 minutes sessions without bleeding through your eyeballs.

So, yeah, I totally agree with that.

Dr Mike T Nelson: Yeah. That's exactly what I feel [01:19:00] like. So when I do that, I'm just on maintenance and then I do like, even what I call a soft two K tests, like an RP of an eight and a half. It's a weird feeling after you've done this enough, like you can, I can feel that my aerobic system isn't that far off, but my ability to handle how much this is going to fucking suck.

Yeah. Not trained.

Dr Kenneth Jay: Yeah, exactly.

Dr Mike T Nelson: And to get that part back. And I think it's an adaptation. It's also. Getting used to that sensation again, and remembering it and working through it and that kind of stuff, it comes back relatively quick, like I was thinking, oh my God, I'm so far off, like three weeks, I was, pretty good to go at that point.

Dr Kenneth Jay: Yeah, where

Dr Mike T Nelson: when I haven't done any aerobic stuff at all, I've let everything just completely detrained for months on end

Jodie: Yeah,

Dr Mike T Nelson: that took a while to get back that I don't recommend that

Dr Kenneth Jay: no, it's much better just to invest that small amount of time just to keep the base there and then spend two [01:20:00] three four weeks for To to bring it all the way up instead of letting it all go.

I remember. One of the danish national rowers Who's won several gold medals at the Olympics in in the 2000 meter and he's, he said that within three, four, five weeks, he can be at 95 percent of his Olympic. Competition level. Wow. All right, he can he and he doesn't do a whole lot.

So he he would actually and that's where the whole thing for me with the Managing it with 5k's because that was what he was doing he was just making sure that he stayed at a reasonable base and he did remember He's a person who's used to rowing 20k a day when he's in training, right?

It's so crazy. Yeah, it's so crazy. But he could actually maintain enough just by doing four, five k's per week. He could maintain enough of his ability that he

could be at 95 percent of [01:21:00] his competition within three, four, five weeks.

Dr Mike T Nelson: That's

Dr Kenneth Jay: crazy. And then he said, from 95 to 100, that takes 3 to 6 months.

But,

Jodie: Yeah. Yeah.

Dr Mike T Nelson: But yeah. At that level, it gets so non linear. Right? Yeah, absolutely. And you even, in a way lesser scale for myself, like, 4 to 6 weeks, I could probably, like, my best 2k now I think is like 730, 732.

In six weeks, I'm sure I could hit 730. Now, if I wanted to go from 730 to 720, now I'm going to have to start dropping some lifting.

I'm probably not going to have to travel as much. I can do it, but. The dedicated time it would take would be, I'd probably give myself at least 8 to 12 weeks, just to get those next 10 seconds, it becomes a very much an exponential type thing at some point. Absolutely.

Dr Kenneth Jay: Yeah. So it yeah.

And double that for the next [01:22:00] 10 seconds, probably.

Dr Mike T Nelson: Right? Yeah. And then it gets harder the less you go. It just expands. Yeah. Yeah. That's just how it is. Yeah. Cool, man. Thank you so much. Tell us about where people can find you. I know you've got an app that's got a lot of these awesome protocols and everything in it.

So yeah. Absolutely.

Dr Kenneth Jay: So, the rowing app that that I created with a partner of mine, he's out in California. That app is called Rowforge and you can go to rowforge.com. It has this whole Viking themed and inspiration. So all the workout that's workouts that built that's inbuilt there, you can basically hook it up to your concept to rower and it'll upload the entire workout that you choose to do and set it for you.

Oh, so

Dr Mike T Nelson: it'll upload to the PM five?

Dr Kenneth Jay: Yeah, it uploads to the PM five. Oh, nice. It has be it has to be the PM five because it's Bluetooth connected. Bluetooth,

Dr Mike T Nelson: yeah. Yeah.

Dr Kenneth Jay: Yeah, but it uploads it and it actually also has, it has a bunch of different programs built in depending on if [01:23:00] you want to do aerobic power, aerobic capacity, if you want to do anaerobic production, anaerobic tolerance, stuff like that.

And then it has a section called the power tens, which is basically different types of shorter intervals. done for 10 rounds. That's also a segment in itself from there. And then it actually also keeps track if you want to do testing. So there's the there's the power profile in there that it will calculate that for you.

And it'll estimate. other distances based on your 2k time. So it's all derived off what's called, what in the old days was called the Jensen power profile. Kurt Jensen was tremendously successful rowing coach back in the. I forget, probably back in the 80s 80s, 90s work with, if I remember correctly, the of course the Danish team, but also the German team and also teams in New Zealand, I believe.

So he did this whole calculation thing based on everything, where [01:24:00] should they sit in shorter duration power. And where should they sit in like longer duration power all based off of the the 2k. So we put that in the app there as well. So you can really geek out about that as well. And yeah, it's it's I think it turned out really well that app.

So go check that out. And other than that, I'm not that intensively present on social media, but you can find me on Dr. Kenneth J on Instagram. So

Dr Mike T Nelson: cool. Yeah. Awesome. Thank you so much for sharing everything. We really appreciate it. That's awesome. And yeah, thank you so much for introducing me to the rower and you're the main guy that got me back into doing more.

cardiovascular stuff. I don't know how many years ago now. And it's it's been super useful. It was one of those things where it's like, I wish I would have done

this like so much sooner, but I'm also thankful. I was able to do it when I did. So thank you so much for all that. I really appreciate it.

Dr Kenneth Jay: Thanks Mike.

And thank you so much for everything that we've talked talked about over [01:25:00] and past. I really appreciate everything that you. That you talk about and what you teach and what you've taught me. And thank you for the the FlexDiet podcast as well. I'm a ample listener of that. Every time I hit the road in my car I put on, podcast.

So thanks for that.

Dr Mike T Nelson: Oh, thank you so much. Really appreciate it. Awesome. Thank you, sir. Thank you. All right.

Speaker 2: Huge thanks to Dr. Kenneth Jay, thank you so much for being on the podcast and as always, for many years, sharing all your wonderful wisdom and knowledge with all of us and especially myself most days. I appreciate you got me into the roar many years ago and I. Yeah, I even had an athlete recently say that she likes the rower and she then corrected herself and said, I can't believe I'm actually saying that.

So, um, no disclosure is a concept too, but that is my favorite rower so far to date by far. Um, I'll put a link down below that if you are looking to purchase a rower. [01:26:00] Um, I do have an affiliate length via our friends over at Rogue. They do a great job with delivery. They usually have them in stock.

Unfortunately I've never seen the concept two rowers on discounts, so I don't have any discount codes or anything, but you wanna help support the show and go to Rogue via my affiliate link below. That'd be amazing. So again, big thanks to Dr. Kenneth J. Check out all of his wonderful stuff. I we'll put links to all of his stuff down below.

If you want to get in the Flexible Meathead Cardio course, it's open for a limited time. Hop onto the newsletter. I'll have all of the information going out this week. We may run it again in the future and planning it to do the level two, the anaerobic portion this summer, so stay tuned for that. If you wanna check out some ketones, check out my friends at Teton Ketone Esters below.

Use the code, Dr. Mike to save some dero. Shout out. I am a scientific advisor to them and an ambassador. Lastly, if [01:27:00] you're looking for great electrolytes with higher sodium, which is beneficial for performance. Check out my friends over at Element, down below. Also, thank you so much for listening to the podcast.

We really appreciate it. Again, big thanks to Dr. Kenneth J for sharing all of his information, all of his protocols here. If you have someone who may enjoy this podcast, please forward it to them. Make sure to tag myself and Dr. Kenneth J online so we can give you a big thank you. Hit subscribe.

Like, download all the wonderful stuff with the old. Algorithms there. That helps us get much better distribution for this podcast and get good, solid information out to everyone. Thank you so much for listening. Really appreciate it. Stay tuned. We'll have another one for you next week. See you.

A great little actress. Yep. And getting smaller all the time.

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