

[00:00:00] **Dr Mike T Nelson:** Hey there, what's going on? Welcome back to the Flex Diet podcast. I'm your host, Dr. Mike T. Nelson. On this podcast, we talk about all things to increase body composition, strength, and performance, all without destroying your health and your flexible framework. Today on the program, we've got my good buddy, Dr.

Chris Perry. I work with him and the other guys, Dr. Andy Galpin Dan, the whole Barbell Shrug Crew, and everyone else over at Rapid Health Optimization. I wanted to get Dr. Perry on the program here to talk about his research in the area of sleep. So we cover everything from, the standard hygiene stuff, which we briefly talk about.

I think most people are aware of that. And then we talk primarily about the use of sleep restriction the kind of U shaped curve are you really at risk if you sleep, quote unquote, too much? Some of the epidemiologic data would say yes, but there's a bunch of caveats to that. And then we also talk about shift work, military personnel.

And other people about tips they can do to help with their sleep, some of the problems they encounter. This especially applies to people doing shift work where they have to transition from days to nights or evenings and back and forth. So I really enjoyed this podcast with Dr. Perry. It's a real wealth of information, and not only is he a hardcore academic, he also coaches people over at Rapid Health in addition to helping with lots of the internal education across a wide variety of topics.

So I always really enjoy listening to people who are legitimate academics who have published a lot of research or up to date on it, but are also in the quote unquote real world coaching people, because I think it is very easy to look at studies and to have an idea of what may work in the real world.

And then when you coach people, a lot of times you find out. Oops, that that doesn't work so well. Like I know I've made that mistake many times. So having not only knowledge, but the applied knowledge as I preach all the time is very cool. And then this podcast is brought to you by the Flex4. So if you want to know Dr.

Perry's top four things to do to improve your sleep, then check out the flex four. Go to mike2nelson.com forward slash flex for F L E X the number four for all the information there. And then something else that I've used with shift workers and people who are a little bit more sleep deprived is actually ketones.

We didn't have time to discuss this on the podcast. Hopefully we'll have Dr. Perry back on to pick his brain about this too. But what I've noticed is if you can give people exogenous ketones, That when they're more fatigued, it definitely seems to get them back to baseline in my experiments here I've noticed about 10 to 20 grams seems to be best This is providing the brain with an alternate fuel source.

There's some data showing that under high levels of fatigue and stress Glucose metabolism may not work quite as well, but the brain can still use ketones So my favorite source of exogenous ketones is tecton It comes in a ready to drink can. It is the BHB molecule that they've bonded to glycerol. So it is a unique molecule to them and it tastes pretty darn good.

If you've tried any other ketone esters, historically, almost all the ones I've ever tried with the exception of Tecton, taste frigging horrible. They are just flat out. Or this one is actually pretty darn good. I actually quite like it. I do have a financial interest in them. I am a scientific advisor over at Tecton and I am an ambassador.

So take that with a grain of salt, but we'll put a link down here below where you can check it out and a code where you can actually get a discount. So I've told people is just, try a four pack try one or two cans. Each can has about 10 grams of ketones. And so far, almost all the feedback across the board has been beneficial.

The nice part about using this with shift workers too, is that it's not a stimulant. So at some point, if you've only got three hours left in your shift. You don't really want to consume a lot of caffeine because you have to go home and sleep and come back a lot of times on short order and do it again.

So caffeine can be beneficial at different times. But before you go to sleep, no, no bueno. Well, the nice part is I've had two cans of ketones and literally gone to sleep and had no issues because it's right. A different fuel source. It's not a stimulant. So check them out there and enjoy this podcast.

With Dr. Chris Perry.

[00:04:52] **Dr Chris Perry:** As junior faculty, they're my priority at the moment to start getting things going

Where did you get started? Where'd you get your PhD from?

[00:04:59] **Dr Mike T Nelson:** I did my PhD at the University of Minnesota

[00:05:01] **Dr Chris Perry:** Okay.

[00:05:02] **Dr Mike T Nelson:** Yeah, it was good. It was a, the department was great. It was just, I didn't get along with my advisor, so that didn't go so well.

Oh, okay.

[00:05:14] **Dr Chris Perry:** I've heard those horror stories.

[00:05:16] **Dr Mike T Nelson:** Let's see. Ooh, that's loud. Make sure this works here.

My advisor's whole goal in life was to. No matter what I did, I was going to be there for the longest amount of time possible, and it was just to make my life a living hell because his advisor made his life a living hell. So he felt compelled to pass it on.

[00:05:36] **Dr Chris Perry:** Oh, I hate that.

[00:05:38] **Dr Mike T Nelson:** I'm like, Tell me what you want done.

I'll get this shit done. I'm not looking for an easy pass. Just, what do you want? When do you want it? We'll do that. And then we're good, right? No.

[00:05:51] **Dr Chris Perry:** I must have been blessed because I had the best committee ever. I had very student centric professors that were very kind. And I've seen, I saw horror stories at Arizona State.

Of my fellow colleagues of mine and what they went through and I'm just like, damn, how did I get lucky choosing good people

[00:06:10] **Dr Mike T Nelson:** out

[00:06:10] **Dr Chris Perry:** of control?

[00:06:11] **Dr Mike T Nelson:** That's what I tell people now. I'm like, just spend a fair amount of time like picking your advisor. And talked to the students who are still there in the lab.

And if you can find the students who left, talk to them, because I didn't realize that there had been, so while I was there, it took me seven years. We had four people graduate. We had at least three times that amount somehow masters or grad students cycle through the lab. Who would get in an argument match with my advisor and were never seen again.

Oh

[00:06:47] **Speaker 6:** gosh.

[00:06:50] **Dr Mike T Nelson:** Good times.

[00:06:53] **Speaker 6:** Right?

[00:06:56] **Dr Chris Perry:** And it took me, I was ABD for a little bit and just going through that.

I'm glad to be, done and away with and finally moving on in my own direction because that was, the whole reason why is because during COVID kind of delayed my dissertation. Oh

[00:07:08] **Dr Mike T Nelson:** shit.

[00:07:09] **Dr Chris Perry:** And so I, yeah we were about to start doing sleep interventions with kids with disabilities because I was an adapted strength coach at that time in Arizona.

And they had a huge population of kids who were involved with sports, who with all sorts of spinal related disorders and disabilities. And my, my, my chair was like, that'd be great to do, sleep related studies with them. And I'm just like, yeah, well, I'd like, that'd be awesome.

And then of course, as soon as we start to write it up. boom, COVID hit. And so I was vastly delayed, had to completely redo the entire workup and ended up doing a secondary analysis of a study that he and I worked on as when I was a first year student. But it was still, it was a great study.

I learned a lot from the whole process. I learned more about advanced statistics than I ever thought I would ever want to learn,

[00:07:55] **Dr Mike T Nelson:** Yeah, I just got three reviews I have to finish today actually for abstracts and they're like, well, the stats just seem weird. I'm like, you're asking me like you're asking the wrong dude. Like I, I know basic stats, but I, any peer review I put down where it's like. And my pea brain, you could do basic stats and you did some fucking Bayesian statistic, God knows whatever.

To me, that's a red flag. So I put like external stats review. I don't know why they did this.

[00:08:22] **Dr Chris Perry:** It's even worse. Straightforward

[00:08:24] **Dr Mike T Nelson:** T test. I don't know why you're doing this shit.

[00:08:26] **Dr Chris Perry:** And that's it. And that's what I love about exercise science because so much about exercise science is RCTs, just looking. Just looking back and forth and let's intervention control group. Great. Anova is all day long until you get to a vast, intervention and epidemiological mixed in study like what we did because, and I don't know what your take is on this, but after going through my dissertation, I never want to do a multi site study ever.

Oh God, no. Because of the amount of just issues that come up with how different coordinators process data in a different way and set up their Excel sheets different. The biggest issue with my dissertation was the amount of missing data. And it was absolutely insane. And so one of my Chair, one of my committee members had to teach me how to utilize linear mixed models to be able to accommodate for it.

And I was like, this is a, I'm grateful for it because I learned some of the most advanced stuff ever. But at the same time, I was like, there's no other graduate student at ASU doing this right now. This is insanity. And so, and he was actually impressed because he's yeah, I haven't seen any of our graduate students do that.

That's insane. Never again. But it was a good learning lesson and I sure as hell learned a lot about sleep and older adults. So that was the big thing there.

[00:09:40] **Dr Mike T Nelson:** That sounds horrible. I had I had to get my third study done because the stats didn't work out on, the first study, the third one, basically I found no results.

So they said, we're not going to publish it. And I'm like, I did the thing. Like I did the whole study. I did the human subjects, FMD, blah, blah, blah. So I actually started how to find another. Topic it farmed out to the epi department and they did a nice intervention study, looking at borderline type two diabetics, exercise, all this stuff and get all the data from him.

Okay, cool. Looking at all the data, spend, three months trying to figure it out, stratified blah, blah, blah, do all your stats, all your cool charts. Great. Hey, cool. We found an effect. I go to bed and I wake up the next morning and I'm like, something about this doesn't seem right. Like, how does the exact same data point to three decimal places show up across multiple subjects?

I'm like

[00:10:29] **Speaker 6:** meh.

[00:10:30] **Dr Mike T Nelson:** So I asked him about it and he's oh. So I said, give me all the raw data. Well, it turns out they didn't give me the right codes. They had only given me initials. And there was three people with the same duplicate initials out of 30 in the study. And the data got mixed between trial 1, trial 2, and trial 3.

And I'm looking at this, and I'm going, oh shit. So I'm then like, give me all the raw data, give me all the scanned files, I don't want anything handwritten in, give me all the Long story short, I spent 5 months redoing all of that, and it shows no effect. And then he goes, well, we're not going to publish it now.

What do you mean you're not going to publish it? It's a year and a half of my life. And I found your error that you fucked up on that I could have easily sent and published it and found a result no one would have found it, and so then I had to go find another study. So, yeah.

[00:11:19] **Dr Chris Perry:** Oh, God in heaven.

So I now know your, I can taste your disdain of academics.

[00:11:25] **Dr Mike T Nelson:** Yeah, it was at that point. I'm like, yeah. This is the second study I've done, and you're not going to publish it? I'm like, what we

found is what we found. I don't control the data. It would have been better with the error that you sent me originally, because we found something then, but it's not correct.

[00:11:40] **Dr Chris Perry:** Oh, God. Well, that makes me think of the countless studies that have been published where they didn't find the error.

[00:11:47] **Dr Mike T Nelson:** Oh, yeah. Not that it's ethical and I don't agree with it at all, but shit, I see how that stuff happens. It's if you have to publish and you've got a limited timeframe and you're like, this looks wonky, ah, whatever we found a result, it's oh, and then you wonder about it because peer reviewing, like you don't see the raw data a lot of times.

A lot of times I'll request it if something looks weird, but. You're assuming the lab did their due diligence, and all this stuff in the background that you can't verify even as a peer reviewer. So it's exactly freaky.

[00:12:18] **Dr Chris Perry:** That was one of the things I loved about my mentors.

He was all about ethics, and so he was in, but he was also about, publishing no data either. Well, no result because he's this is important information. People should know that there was no result here with this intervention so they can do it better or do it differently. And so I'm really grateful for my mentor, Dr.

Sean Youngstead. I'm not sure if you've ever read any of his research. He's bigger into the, he's getting more into chronotype now. He's still at ASU. But he's. He's really interested in longer sleepers. That's his thing. And he did a lot of work with veterans for a while. So, and did a little bit of sleep restriction work as well.

He put me onto that, which I am really interested in fascinated about too. And maybe that's something we could discuss today. But that's that's learn from him. So a big on the cognitive testing and man, everything exercise related when it comes to wheelhouse.

[00:13:08] **Dr Mike T Nelson:** That's cool. And if we just jump into it, like when you say long, Yeah.

Sleepers, are you talking about kind of the, I think it's mostly from epi studies, the kind of U shaped curve where it's like, or inverted you, I think, where if you don't get a lot of sleep, Ooh, your mortality, your risk goes up. But then there's

other data at the other end of the curve that says, well, if you are sleeping a lot, that's also an issue, which my interpretation and correct me if I'm wrong on this is that it may not be that the sleeping longer is bad.

It's that may be an indication of some underlying. Metabolic or disease process or something like that. Because I've seen people like, cause I sleep a lot. Like I always have, I don't know why I've got my own little whack job theories as to why, but. I need about 10 hours in bed every night to be pretty functional.

And people are like, Oh bro, you're going to die so early. I'm like, I don't have any other metabolic issues underlying. I think that's a disease population you're looking at that end of the curve in those studies.

[00:14:08] **Dr Chris Perry:** And I love that you just pointed that out right there, Dr. Mike is, there's such an individualistic approach to this.

It's like everybody is different with what they need. And that's something that my mentor was big on talking to me and teaching me about. He's so it was his paper with Dr. Kripke that showed that U shaped association that he did way back when in 2004. And he did this on, they did this on thousands of individuals when they collected the epidemiological data.

And they showed exactly as you just described that U shaped association at anywhere from about six and a half to seven and a half, that's like the golden zone, right? The least hazard ratio, anything less than that. And anything greater than that, he started to see an increased hazard ratio. And it's usually above 8.

5 or so that you saw more of that drastic curve. And, our own Doug Larson, he asked me, he's he was like, so what about individuals who, are fit and active, does that curve change? And I was like, yes, I would almost guess without trying to look into the literature, I can almost guarantee yes, because of the greater need for more physical restitution, you're going to get those individuals who are going to need eight to nine hours of sleep per night, like all the athletes in the world.

I've ever worked with specifically are always the ones who tell me, coach, I need nine hours in bed every single night. I need to feel like I can approach the bar tomorrow morning when I'm doing my PRs and I'm doing my barbell work. I'm like 1000%. And so it's we have to be better as communicators.

with the general public is saying, don't look at every study as, Oh my gosh, if I get more than seven and a half, my hazard ratio starts to go up. It's I've had to communicate to a lot of people. You're fine.

[00:15:38] **Speaker 6:** You're okay.

[00:15:39] **Dr Chris Perry:** But it's. The thing that I found fascinating about long sleep because that's what my entire dissertation is on that's the population we looked at it was primarily older adults and when you look at older adults and we know as sleep architecture changes throughout the lifespan, we see how older adults usually have a little bit less total sleep time same amount of time in bed, but with total sleep time and I actually just to you Freshen up, because it had been a little while since I had dived into my dissertation and went through the literature yesterday, and there was actually a newer study that just came out that showed that it actually, it might actually be age dependent now on what the more recommended sleep might be, and this was actually The entire philosophy behind my dissertation was to look at, all right, if we did moderate sleep restriction in older adults, would that improve their overall sleep?

Would that improve metabolic health markers, inflammation? My specific expertise on it was exercise science, and so I looked at it from a physical activity perspective. But we had this thought, what if we restrict their sleep down for those who sleep way too long? And these are the individuals who are in bed more than eight and a half hours a night.

And we actually. Now, dissertation aside for a second, because we didn't find anything, but when you look at this particular study that I just brought up, yesterday as I was reading this, that for most older adults, it seems that seven hours might be more prominent for most individuals above the age of 65.

And I thought, huh, well that actually makes sense, right? And so, and I'd love to hear your thoughts on this too, is, how sleep restriction therapy is utilized as one of the most widely used techniques to help individuals with insomnia. So, if it can help. put that pressure on the brain to help consolidate sleep, well then that might benefit older adults much more and that actually gives some leeway to this epidemiological study that showed that seven hours might be a great target for older adults for that reason.

[00:17:23] **Dr Mike T Nelson:** Yeah, I always, there's some studies that have been done in I don't know if it was the North Pole or the South Pole, where, because everything is inside, they basically removed any reference to light, they removed any clocks, they couldn't have a watch, couldn't have a phone, and I

can't remember the exact details of the study, but I think they just let people sleep normally.

They took one group and just removed all cues and just said, just sleep as much as you possibly can. Wake up, go to bed, just, do whatever. And I want to say the average sleep in those people, which was only for two weeks, so maybe they had a big sleep debt, et cetera, I want to say it was closer to nine and a half hours or something crazy, and there was people sleeping like 10, 10 and a half hours.

It was crazy. And there was another version, I think that replicated it too, that showed. I want to say the nine to 10 hour range too. So I always thought that was fascinating. Again, that's not real world because we've got sunlight and we've got cues and all that stuff, but I've. I've just wondered about if we remove those things.

The other thing I think of when we go on a kiteboard trip to Baja or Costa Rica, where the sun is very much the same, but it gets dark early. Like people I know I've hung out with my life are like night owls by like day six. It's ah, I'm going to bed now. Bro, it's eight 15. I don't care, man.

I'm so tired, because you're outside all day. You're having all these cues. So I'm always curious about what the. Sort of the intrinsic amount is and how much of that is just being reset on a daily basis due to, different queues.

[00:18:54] **Dr Chris Perry:** That's interesting. I've never thought about that before, but I'm with you a hundred percent.

Like when you were on point with sunlight and then in the evening again and getting that darkness, it's like clockwork every time. It's it doesn't matter where I am. I could be on my honeymoon that I'll be on in four weeks and I'll be like, Oh, Kelly, it's a clock.

But that's very interesting. And so with now. Is your expertise specifically in sleep? Cause I know you're in the ISSN and I know you do and I know you do a lot of nutrition related things with flexible dieting and metabolic flexibility and say, how did you get more into the sleep area when it came to working with Rapid?

[00:19:29] **Dr Mike T Nelson:** So working with Rapid on sleep, cause I do the aura analysis was basically I started doing some of the TPP stuff. So for listeners, how we, aggregate all the stressors and stuff like that. So then he

brought me in to help with that. And then once that role was filled, honestly, I think they just.

Like to me and wanted me to keep around. So Andy's Hey, you should do sleep analysis. I'm like, great. I've been doing that on clients for eight plus years. So I just fell into it because similar with my own clients, it was like, I wish on one hand I would have done it earlier, but we didn't really have very good technology.

And the technology was just a pain. And then once aura came out, I was. Good friends with Harpreet was the former CEO. I was like, wow, this is cool because now we've got pretty good data. It's not a hundred percent, but it's good enough that it becomes actionable to do it. So I started ordering all my clients like or rings was sending them to them.

And because now I had a way of cross checking the habits that we were giving them or before it was like, oh yeah, just write down what time you go to bed, like equate, how you feel in the morning. And compliance was just a disaster, or at least this way I can look and go Okay, bro. It says you slept six hours last night.

Instead of berating, I'm going to be like, Hey, what's going on? A lot of times like it's, oh, the kid kept me up or the dog was crapping in the basement. So I had to throw him outside or whatever, right? There's something going on. And then if they can get back on track, it's Oh, we're good.

But then if something keeps happening all the time, then it's a different conversation. But it was nice to have a way to quote unquote spy on people and to see what they were actually doing instead of only relying on self report.

[00:21:06] **Dr Chris Perry:** Right, and I love the Aura, Aura data for that reason.

It was one of our professors and her name is lost on me right now, but I remember during my PhD when the Aura ring first came out years ago she was actually one of the leading individuals who was doing the validation studies with. Oh, cool. And I thought that was really interesting and they were looking at all sorts of things and she's more into postpartum work.

It's, I think it's Dr. Huberti. So Jen Huberti did some of that research. And so, and I remember at that time, cause my colleague, my fellow student, who was also in the PhD program, she was telling me all about it. And I was like, Oh, or

a ring. And so I remember looking it up and it was like a poor PhD student at the time.

I was like, Oh, I can't afford this. It's no way. And I remember talking to Sean my mentor at the time. And he's Oh yeah, I've heard of that. Yeah. Yeah. Maybe you can write a grant for it. I'm just like okay, sure. I was like, so that was a dream. But now that we have this awesome ability to use them as we're working with rapid and, doing how we serve our community there, it's been a real good eye opener and I don't know how much you read into ACSM or anything, but Dr.

Michael Granger is the best. a big researcher in this area and he actually just did a presentation at ACSM these past couple weeks talking about how great these trackers are for certain aspects of sleep and for sleep it seems to be okay. He said it's heart rate variability. That's the one that's we need a little bit more work and it'd be interesting to hear more about how they can make improvements in that area.

[00:22:29] **Dr Mike T Nelson:** What were his issues with the HRV on it?

[00:22:32] **Dr Chris Perry:** I, so I don't know specifically. These are what I wasn't able to make the talk. This is what was shared with me. And I've spoken with him before, so I'm real tempted to reach out to him and be like, can you send me your slides? Can you give me like a 15 minute audio message about it?

And so it was Corey, who you also know Corey VanVick who was at the presentation, he was walking me through it. And so, and I, I'm, I need to. That is still an area of outside of my scope, I would say that I still need to work more with his heart rate variability, which is why I sent you that message the other day.

But I find it more and more fascinating as it relates to so many of our clients constantly bring it up. It's just like my HRV. And so, which is why I loved your take on the whole aspect as well, as it relates to not only their sleep, but so many other underlying factors that could be contributing.

[00:23:18] **Dr Mike T Nelson:** Yeah. And I pushed aura for years, although I don't really know many people that are now anymore of. I know it's a pain in the ass, and I know you want it to be, don't have to do anything, but could you please just give me the feature of doing a command and measurement to get an HRV in the morning?

Because, in athletes, as if your resting heart rate is, gets to a low of 38 or 39 on auro, I can guarantee your HRV is not really going to move unless you go out and do like a bender at the bar and sleep four hours, right? You just have so much parasympathetic tone, saturation, lying down.

You're measuring it, lying down. Your heart rate's already super low. You're just not going to see much. But if you measure it seated or standing in the morning, you just hit a button. It goes out. It does the measurement, that kind of solves that issue. But I understand Aura's perspective where. They're not really like marketing it to super athletes either, and it just adds confusion to the screen. And so it's nah, we're just not going to mess with it,

[00:24:16] **Dr Chris Perry:** which I find that would be a useful metric for anybody to know what is his

[00:24:20] **Dr Mike T Nelson:** first thing in the

[00:24:21] **Dr Chris Perry:** morning.

[00:24:22] **Dr Mike T Nelson:** Yeah. And that's the issue that, like with the research, like a lot of the research on HRV was all done via one point command and measurement in the morning.

Yes. You had some hospital in stays. You had some people sleeping in labs and stuff like that to collect 24 hour data over the course of the night. Right. But. We just don't have this back catalog of data of people. Having months to, frigging years now of grabbing HRV overnight. So we don't have a lot of the literature to say, what does that really truly mean?

And it's not quite the same as doing a command and measurement first thing in the morning. It's

[00:24:56] **Speaker 6:** right.

[00:24:56] **Dr Mike T Nelson:** It's similar. And then as you athletes get more trained, it becomes, in my opinion, more divergent on that.

[00:25:02] **Dr Chris Perry:** Right, and I completely agree.

[00:25:05] **Dr Mike T Nelson:** So what are some of your top takeaways with, oh, I was going to get back to the sleep restriction.

So explain what that is for listeners and when would you consider using that? Because it seems paradoxical that, oh wait I have sleep issues and you're telling me to restrict my sleep. This sounds like a stupid idea.

[00:25:22] **Dr Chris Perry:** So, and just to clear it up for everybody, because this is one of the things that is, I still wish researchers would be better about this when they label their studies, right?

Sleep deprivation is not sleep restriction. Sleep deprivation is when you are being deprived of sleep, but you actually are, you have some sleep debt. We need to fix this. Whereas sleep restriction is, a tool that we use and to help individuals potentially consolidate their sleep. So in my experience with working with it, sleep restriction can be, and it vast, it's vastly different from study to study.

You'll have some studies where they do very light sleep restriction to moderate sleep restriction, like what I did for my dissertation versus Vast sleep restriction, where you'll see them literally just nuke the hell out of their sleep for a night of up to six hours or so. Which I have yet to find a study where they didn't find negative health ramifications from that.

And so with my experience working with sleep restriction, first did it with, My as a PhD student working with Dr. Sean Youngstead in our multi site sleep study, and it was a very long study. He was working on it before he actually came to ASU when he was still in South Carolina. And it was five different schools where they wanted to look at How they could improve exactly as you and I were just discussing.

Can we reduce and restrict Individual sleep who sleep too long above eight and a half hours of sleep and potentially improve not only CRP Not only HbA1c because that was what he wanted to focus on. He wanted to see how this improved metabolic health markers because If we can help with sleep efficiency and improve that, we might see improvements in metabolic health, which I would have agreed with now that we've seen a lot of literature that's been able to do that now with better metabolic markers being associated with better sleep.

And so, what if we did this for the individuals? And One of the biggest issues we saw in the literature at that time, it was, there wasn't a lot of research that was done on moderate sleep restriction of only an hour or so. When you look at all the studies it's three or four or five, six hours. And to test this, he actually, with Dr.

Zielinski, before I became his student, they wanted to test this to see if it was even tolerable in older adults. And they were able to see that upwards of 90 minutes, it was fine. just fine. Like they were able to tolerate it fine. And so what we ended up doing was a long 12 week study where they would compare average sleepers to longer sleepers, average being your normal older adult that gets, the normal amount, about seven and a half or so hours a night, no real big issues or underlying sleep disorders versus the long sleepers who do.

sleep longer than eight and a half hours a night or so. And so the whole theory was, is if we utilize a moderate time in bed restriction of just an hour at an appropriate time, that's more suitable than that individual that they could tolerate. And so, which, and I'm sure you know this as well.

When you. Make someone stay up later at night. It's much easier to restrict sleep rather than have them wake up earlier. And so, but we wanted to give them the choice. And so, which, looking back now as a full blown academic, I was like, there might be some methodological things here. We need to change as far as potentially helping things here.

And I'll tell you why here in a moment. But that's. What was done in order to help these individuals be able to stay tolerant towards is what works best for that person. Now, unfortunately, because of the nature of the multi-site sleeps study that we didn't find anything for, he wasn't able to find anything for its effects on metabolic health risk factors or inflammation.

And then I wasn't able to find anything with physical activity either. There were some trends that did show. increased counts and lighter physical activity and more associations with being physically active, but it was not significant. It was approaching significance. And so, still being considered for publication where we're trying to get go in that direction for it.

Cause it was, but it was one of the first that was able to show that we tried something like this. And so a lot of my committee members would say that should still gain some attention from somebody that'd be the journal somewhere. So we're still trying to get that published, but that's been my experience of using it.

And the more that I look into the literature and you see this for insomnia, sleep restriction can help insomniacs be able to force that consolidation. And so, and I heard our own Dr. Galpin talk about this as well. Yeah. And so first, I have a great experience working with individuals and with shift work.

And so, and I would love to hear about your experience as well. I Dr. Michael Lane and I, he's my colleague at Eastern Kentucky University. We co direct the tactical strength and conditioning research lab. Oh, awesome. And we work with the DUCJT, which is the department of criminal justice training.

And we've seen, I think, over. nine different cohorts now of police officer cadets that we recruit from all over the state of Kentucky. And we got in there by just being strength and conditioning coaches saying, Hey, let's do your movement analysis. Let's do the intervention. All needs work by the way of course.

And then we introduced our sleep approaches too. And so we gathered for these past nine cohorts, just utilizing basic sleep questionnaires. PSQI, Epworth, and based off of those two things, 77 percent of the cohort has subjective sleep related issues. And I guarantee you, if we were to put aura rings on every single one of those individuals, we would see some wretched stuff as far as that goes and just brings the attention to me.

You know what, every time that I've worked with someone who was a nurse or someone who was a shift worker in the military, it's always been. The most difficult process, trying to get them back on track again afterwards. And you can tell them all day long, Hubermanize it, it needs to be light and bright when you're awake.

And it needs to be dark as hell when you're trying to go to bed. And, that's great and all, but it, When you have a nurse who's been practicing night shift for years, It that's, got to take its toll where you're going to need more drastic measures to potentially help these individuals.

And, I started to think after I, there's the new methods of sleep restriction therapy that I would love to see if you've been aware of that Galpin has talked about that he recently spoke about, he was on a podcast interview with Thomas DeLauer. And this was the first time that I've heard sleep restriction in this way, where you on purposely shrink it down to where you say, all right, rather than Tell someone that we want to get the recommended amount of sleep and time in bed Let's say seven and a half to eight hours or so, right?

It's like Instead let's actually restrict it down to five. Let's create that pressure and then Slowly over time once they've acclimated to that increase the time in bed by 15 minutes And then do it again slowly over time. And so, and I actually heard Dr. Matthew Walker coined it as rebuilding the bedtime as it were, which I found fascinating and I'm like, this might be one of those more advanced techniques that could be more effective for those individuals who don't respond

well to the basic, Oh, get into a sleep routine, start doing breath work, maybe make sure that you are, synchronizing your sleep regularity as much as possible, which we now know is the most potent factor when it comes to someone's sleep.

And it just got me thinking that is a new way to look at sleep restriction therapy, that I'm not afraid to say that I was actually unaware of for a great amount of time. Whereas just being the previous student that I was three years ago, just understood sleep restriction as, Oh we're doing this.

to see detrimental effects. Rather now we're trying to rebuild and use it in a more proficient way to help people get back on track. What has been your experience with that method? Have you heard of this method?

[00:32:45] **Dr Mike T Nelson:** I just heard about it from Andy, to be honest. I've read some basic stuff on it, so not a ton.

My, my take on it is I think from a physiology standpoint, it makes perfect sense. Right. It's okay. And I think of this as like the sledgehammer effect. If you need something, like you've exhausted all your other stuff, like you're basically kind of sleep restricting people to five hours a night to make them.

Their sleep pressure is so massively high that their body has no other option. Right. It's Almost like forced overreaching, non functional overreaching in training, right? We want your body to adapt. So we're going to put so much frigging load on you that you have no other choice other to do adapt.

Right. That's how I think of it. I, for shift workers, it'd be interesting to use possibly as the end of the road after they're done with shift work, because my understanding is that it takes many weeks. And then I would love to see, man, what is the compliance on that? Right. That's friggin hard to do.

Right? Go to bed at midnight, and then you have to have your ass out of bed at five. You're kinda tired, but, Oh, we're gonna do this again tomorrow, And we're gonna do this tomorrow, and then we'll give you a little bit, Only fifteen minutes more of sleep! Don't sleep in, bro! You get 15 more minutes and that's it and

[00:34:05] **Dr Chris Perry:** knowing that the negative effects of sleep restriction are still being placed upon you when it comes to all other aspects of your cardiovascular health, your metabolic health, your cognition and everything.

And that was one of the things that was said about it is this is an advanced technique. If all else fails, like this is what you need to use. But. under supervision and then understanding that this is going to be one of those things where it's about the journey, bro. Let's slowly get through over time.

And so for our listeners, I would say, yeah, don't try this at home. If you're a normal average Joe, who just simply isn't being disciplined with your sleeping habits. Don't do this, but for the more advanced where it's wow, I've got a police officer who hasn't had a good night's rest in four years.

Okay, this might be something to potentially try under the supervision of an individual who might have the ability to have you in a lab and do this controlled for a certain amount of time, or Your spouse is the one who's driving you to and from work, knowing that your amount of cognitive function at that point in time is probably not going to be at its best at that point in time.

But it would be very interesting to see, and I need to, I do need to dive into the literature more to see what's been done, because if that's been used for advanced individuals, and there are some military individuals that you and I work with at the Rapid Community, that could be an advanced technique to be utilized for some.

[00:35:22] **Dr Mike T Nelson:** Yeah, I agree. And how much of it, and I've seen this with the shift workers, especially military, ER docs, nurses, et cetera. One, my first thought is military. I understand is less predictable, but whoever is scheduling these ER shifts, I want to push them off a bridge because like they are the stupidest things I've ever seen in my life.

It's oh, you're working days and then evenings and then nights. It's I've had, I don't know how many discussions with people. I'm like, can you go to your scheduler and at least say, could you get, yes, you'll work overnights, but you'll do it four nights in a row. Not one night here, one evening, you're off.

So they are, I find the constant flipping is just the absolute worst. Like shift worked with so many nurses

[00:36:08] **Dr Chris Perry:** with that issue. I, yes, I 1000 percent agree with you. I can't tell you, I don't think there has been one shift worker I've worked with where that hasn't been the case. No, it's always the case.

[00:36:19] **Speaker 6:** It's

[00:36:20] **Dr Chris Perry:** so difficult.

It's and especially with what we know now about chronotype, it's yes, why, how can we not? start to set up some sort of public policy for health administration to understand or the military to understand, hey, you need to classify specific individuals by their chronotype. And then learn what happens when you constantly shift the clock back and forth like that so drastically.

So, that way at least we have certain individuals who might be more, A, privy to being able to handle the night work, hence the night owls that we have. And then have it on a consistent basis where they have a whole week. to be able to acclimate before heading back to the other schedule. So that way it's much easier to have an actual balance of life.

And I have fought tooth and nail with so many clients in the past that I've had where that's been a big issue. I've might only been lucky once to have somebody who actually had the one week on one week off. And I was like, you're a blessed feller because there are not many individuals who are as lucky as you when it comes to that schedule.

[00:37:20] **Dr Mike T Nelson:** No. And it's one of those things where I just look at it and I go, It wouldn't take that much effort to do your payout would be so much better in terms of employee retention. And I just think about if you're an ER doc or nurse, like if you're sleep deprived, like what mistakes are you potentially making because you're in that state?

Not necessarily saying that's your fault. It's just the fact that you work days and then evenings and then nights and you're off and now you're back on days again. It's you don't know whether you're coming or going you would think that it would take a scheduler, just a couple more minutes to at least block stuff out, even if we don't do chronotype, just give these poor people at least four days in a row, that's similar for Christ's sakes.

[00:38:05] **Dr Chris Perry:** Right. And then maybe they actually have a better shot at being the people they want to show up as around their families. And we'd have less, we'd have less mental health related issues and problems with the relationships with these populations. Cause when you look at the literature, like these are the populations that at the highest risk of all these negative health outcomes, we see both physiological and of course, psychological.

And, especially in I, I'm very biased towards veterans because, they just, they get knocked for so many things. And that's been primarily where all my

experience has been in my past years of working in academia and just, on the side as well. I used to do a lot of volunteer work as a personal trainer and strength and conditioning coach with Wounded Warriors throughout my freshman school time.

And we. And EKV specifically here in Kentucky we for a long time have predicated ourselves on having one of the largest populations of vets in our communities and creating educational opportunities for them. And it's always been near and dear to my heart working with this population. I think it's honestly how I got offered to do my PhD in the first place, because that was Sean's focus as well, working at the Phoenix VA hospital.

And so the entirety of my PhD experience was waking up at 4 a. m. to go work with our vets at the Phoenix VA hospital who had obstructive sleep apnea and you know be their personal trainer and it's just you know, one of the most eye opening experiences for me throughout my career because you're working with these guys who you know would tell you stories about how great in shape they were and all the great things they used to do and it's and Then after getting out of the service and then going through everything they've gone through with night shift and everything else that they had, the poor guys are suffering from so many different health related outcomes and chronic diseases.

It's just, something has to be done to improve how we're approaching working with these adults. And I every person I asked, obstructive sleep apnea or not, you can always. Ask them just Oh, I haven't slept in years. Oh, I haven't had a good night's rest. It's okay, we really need to focus on better approaches to working with this population.

[00:40:06] **Dr Mike T Nelson:** Yeah. And especially in that population, how much of that, at least what I've seen is a lot of these people have a very hard time downregulating, whether that be, past trauma, stress, sleep, sleep issues, airway issues across the board, you just see all of them. That's the one thing That I see that's very common is just their ability to down regulate is generally not super good I don't know if you've seen that also.

[00:40:35] **Dr Chris Perry:** Yes. Yes when you look at the I'm trying to remember our, the name of the test the mini mental health state test that we would utilize throughout my dissertation and through Sean's aspect of the study looked at that as well. And one of the primary things that they always came back with was just always having that uneasiness, high levels of anxiety, individuals who just couldn't turn it off.

And that was just anecdotally speaking when interviewing a lot of my students. Subjects that I had that was always the problems that they just felt like they could not relax even when they were relaxed and these were guys who you know were just So on top of things in general, you know there's a couple guys that we work with right now who I won't say names throughout our community itself who we they'll tell me all the time.

They're like chris. I feel great like I feel good. I don't feel stressed. It's well, that's not what your heart rate variability right now. And then, and I don't know what your, this could be due to the art of coaching as well. It's okay, well, how do I get them to really tell me what potentially is going on?

And because you can, even when people deny it, there's always something psychologically that's going on back there behind the scenes that they're not discussing with you. And then finally, and this is something that I. Really try to always work on, I'm all about the relationship. I found that's the best approach to coaching.

And once you finally do get to know someone and peel back the ocre layers of the onion, you start to find out real quick, Oh, there is some emotional trauma back there. Oh, you're still thinking about your times back overseas. And, Oh, that is going on in your family. It's okay. And, as, and I love what, What Dan says, and I know that we all as academics know this too, if there's something going on psychologically, you better Dan believe it's going to manifest itself physiologically real quick, even if you're unaware.

And I think that's, the kind of population you and I work, you and I work with. These are individuals who are just hyper adapted to the challenges of life and they no longer see it as a challenge. And so, although. vocationally right there right now when you're talking to someone like, Oh, I'm good.

I don't feel any pain. It's like that. Unfortunately, it doesn't mean that it's not causing you some sort of distress physiologically. And I think that's something we need to harness a little bit better.

[00:42:38] **Dr Mike T Nelson:** Yeah, and I see it a lot of times as it's, they're unconscious to it. It's not that they're trying to outright lie to me and sometimes they are, but most of the time I find that they either just don't think it's an issue or they have no idea that it is an issue.

Like I've had people, especially the special forces describe it. They're like, after a while, I just got so used to high stress situations that it was just like, no big

deal. But. When I was discharged going to the grocery store freaked me the fuck out. Simple things that we, it's almost like they're in bizarro world now.

Because they were so attuned, performing in a very high stress environment, it was very oscillatory, that not having that is, it's, it feels like a weird thing. A weird thing. And then you've got, maybe the other stressors or other things like going on. And that's why I've used a lot of even now respiratory rate, heart rate variability and looking at their baseline and being like, okay, your levels are really far off.

These markers are showing you that you're physiologically stressed, even if you don't feel it. So then my next thought is, okay, how can I get them to experience some high level of down regulation? So they at least have something to compare it to. The analogy I use is, I live here in Minnesota, it's cold as ass in the winter, like if you were outside and it's ten below, and you walk into my townhouse and it's just sixty five degrees in the winter, you're like, oh my god, this place is so warm, this is amazing.

But if you're my wife working here all day and it's 65 degrees, you're like, you cheap bastard. Why don't you turn the heat on? It's freezing in here.

[00:44:12] **Speaker 6:** Turn the heat on. Right.

[00:44:14] **Dr Mike T Nelson:** So you need that, that, that contrast. So my thought is, okay, how can I get them to massively downregulate? Not that I'm expecting them to stay there.

But I want them to have something to compare it to, to realize, Oh, yeah, I was like really stressed before. I just, I had no idea. I had nothing to compare it to.

[00:44:33] **Dr Chris Perry:** Exactly. And so, and this is, we're finding this a lot too with individuals who I have, like currently individuals with menopause. I definitely start seeing this as well where They're in this state where they're just like, well, I don't feel physiologically stressed, but I just, I feel like I just, I can't ever calm down.

It's well, you have so many changes going on right now that although what you're not used to, you have now have a completely different environment that you are physiologically, that's going to negatively influence the level of stress being placed upon the body. And so my experience and what I've come to learn as far as what might be the most effective tools for this I can speak.

Sleep hygiene stuff all day long. It's okay. Yeah, I know the macronutrients right regular regularity of your sleep Wake time is gonna be one of the best things you can do and stay on top of especially sleep wake But for those more advanced cases like we really need to focus on these mental related Habits to potentially bring that breath down and that's why I love the addition of Emily Hightower to our community Because she I have learned a tremendous amount.

It's like I have, I've been focused on just sleep for so many years and looking at sleep restriction. It's like this is a whole new ballgame when it comes to respiratory rate and learning about the effect that has of putting you into this stressed out state physiologically and needing to retrain people what it actually means to get down into that parasympathetic state.

And so for every client that I have now that I'm working with, I'm like, all right, we need a Parasympathetic approach. We got to learn to chill you out and potentially bring, I'm going to quote James Pennebaker here. We need to bring some emotions to the service surface and get you writing to face what might be going on underneath that.

Maybe you just haven't potentially faced to give us a chance to actually be able to have something to downregulate from. And so that is an approach that I've been taking a lot with individuals lately and just facing what is going on underneath the hood so that we have a chance of actually getting them to a state where they can finally put the head on the pillow and say,

[00:46:24] **Dr Mike T Nelson:** Yeah, and that's where I personally found HRV is useful because even in myself, like most of the time, I know about where my HRV is, but I got this from Simon at iFleet, even now, five to 10 percent of the time, there's something that'll show on my HRV that says I'm stressed.

And I'm like, Oh, this is a piece of crap. This can't be right. I'm like, Oh, historically it's been right most of the time. So then it's okay, what is it? And sometimes it allows you to uncover those kinds of unconscious stressors that you normally would just not account for. And so I found that's, respiratory rate, same thing.

A lot of those metrics I find are good. And when I find a mismatch between the metrics and where the person is, then I used to not trust the metrics. Or now I'm thinking, maybe this is a case where there's an unconscious stressor that they just have no awareness around.

[00:47:14] **Dr Chris Perry:** Right. And this is why having people need therapy.

Oh, yeah. I hate saying that, but it's my fiancée makes fun of me for that. She's maybe you need to talk to someone. I'm like, I don't know what you're talking about. I'm completely fine. Don't need a therapist. The more and more I've worked with special populations, that is technically my, title as a professor in our department as I teach those classes and so on, because I've worked with those people the most.

And the more and more you learn about that, it's hell, if I really wanted to, I could tell everyone was some sort of special population based off of some emotional trauma or mental capacity issue that they're having currently. And there's always going to be some specific tool that we need to use to help these individuals.

And so the more I learn about the parasympathetic nervous system and breath and heart rate variability. This is definitely an avenue because what you just said has happened to me too, where I've looked at my aura data and my aura says I'm stressed. I'm like, I don't feel stressed. What's going on?

But then all that's going to create the subjective feeling really quick that I'm stressed. It's Oh, well, it's manifesting now within the aura data. I'm very interested from your perspective. So And that you and I were going back and forth on slack about this the other the other evening.

And I loved your take on heart rate variability when it came to what types of tools we can use to help these people. And in my experience that I've been working with our data now analysis for two years now and looking at it with a fine tooth comb with the individuals I work with who do exactly what I tell them when it comes to just sleep hygiene related practices.

Everything fits perfectly. HRV literally jumps to where you had said was that primary range. All of a sudden it goes from being 25 or 22 to all of a sudden sleep regularity, not eating too late, practicing breath work. Boom. consistently 60s, for the next few weeks or so. It's okay, definitely found the lowest grabbing fruit right there that we could when helping these individuals.

Now, let's say we have one of these individuals who might be someone where you need more in advance sleep related tactic here. And so, and I loved when you went more into detail behind where your challenges that you've had with your HRV and vision and these things, which I found absolutely fascinating.

If you had these advanced individuals that needed that, what is your first approach to what tools you use to help those particular individuals who just simply don't respond to everything else?

[00:49:25] **Dr Mike T Nelson:** Yeah, so if they're not responding, I'm not convinced it's only a genetic thing. Is genetics a huge component of it?

Yeah, it's just like VO2 max genetically is and trainability and all these other things. But if it's really low, most of the time I found there's something going on. And so then I'm thinking, okay, to their brain what type of sympathetic stressors are going on? And I think an underappreciated one, granted, I'm biased because I work for the Kehrige Institute that does, functional neurology, clinical neurology work, is that if the map in your brain, you're generally having to generate it from your eyes, Your vestibular function, your proprioception, like where your joint is.

All those things kind of form your map and what your reality of the world is. Those should all agree with each other. If they don't, your brain's going, oh, there's an error here. So if your eye function isn't matching what your vestibular function is saying, your brain goes, Oh shit, there's an error somewhere.

Well, what do I trust? Do I trust the visual input? Do I trust the vestibular input? Do I trust the proprioceptive input? And to me, that creates a sympathetic stressor. So your brain is going to have to figure out some work around or it's going to get stuck in this state where it's not really sure what's going on in your world, right?

So if you close your eyes and try to walk around in your house, your stress is going to go up because you took one of your whole systems offline that you use to create all these maps. So in my case, my right eye is vertical and horizontal deviation, pretty significant. So when I was a kid, I used to see in double vision.

I went to the eye doctor when I was like four and my parents told me the story of they have this little dog at the end and the eye doctor says, Hey, how many of these do you see? And I guess I told my parents like, well, two, but only one of them's real. Because if your eyes are split so far out, they form those images and the visual part of your brain in the back, your brain can't fuse them together to create 3d images.

And so what do you see? In double vision. But when you proprioceptively interact with your environment, you obviously can't interact with a false image. So you then learn what's a real image and what's a false image. And then long

term, the brain's solution is to do what's called visual suppression, where it goes, hey, if I just dump one of these images, I go from binocular to monocular, I've solved the issue.

I got rid of all the errors that are generated that are driving me bonkers. So my default is to drop to monocular vision. But now if you fast forward, well you live in a 3D world, so, monocular, you have to do workarounds. You're looking at parallaxes, you're looking at shadows, you're looking at prediction, you're doing all these other things to try to figure stuff out.

Which to me, in and of itself, is a sympathetic stressor, because you're taking the most inefficient pathway to get around. So back to HRV, in those individuals, I'm thinking, neurologically, is there something off? And a really crude test I use is, do you like ball sports? Ball sports? Ah, I hate ball sports.

And I've literally told, I don't know how many trainers now, Just take a light tennis ball or softball, throw it to the person and watch them catch it. If they try to swat at it and move out of the place and it just looks unnatural, I can almost guarantee they've got some neurologic thing going on. If they catch it normally, they're probably fine.

Yeah, ball sports are great. Yeah, probably not so much. And if they have something weird. By all means, find a good functional, clinical neurologist and get your stuff sorted out. But that more common than not. I didn't figure any of this stuff out until I was like in my mid twenties. So it happens very late.

[00:53:06] **Dr Chris Perry:** Interesting. That is fascinating. And I'm really interested in that world. Like, when you started talking about it, when you sent me that message, I was, I like, perked up. Because I was like, oh, I've battled vision issues forever. I've had astigmatism since I was a kid. And for me, that always made me wonder.

It's just alright, well, am I blind as a bat? As my dad used to say. Could there be some things here that could be the reason for why, at the beginning, but I do like ball sports, but it was after grudgingly amount of times being berated by my father, catch it better. So did I adapt in a way to just get better at handling it in my brain, potentially suppress it to where it's just there's the ball, there's the ball, there's the ball.

Or was that just my Italian upbringing that got me used to how people who make red sauce talk on a daily basis. But I found that fascinating because that made me wonder, could the individuals that I work with have some more

advanced neurological things going on or more to the story with the emotional traumas that just aren't being dealt with to help them get into that better direction of helping them get better sleep?

Because, when you look at this guy, Mike, it's just wow, this dude just does not. Does not sleep. And he's ex veteran and everything else. And so that's what I find the beauty of being in our world is I look at every situation as a puzzle and what can I do to solve this puzzle for this person so I can help them at the end of the day.

[00:54:27] **Dr Mike T Nelson:** Yeah. And the other little thing on my sheet as we wrap up is anytime they've had multiple concussions, TBI trauma, or like with military people, I just ask them, what is your profession? Oh, yeah, I fired a lot of it was the breacher, or I fired a lot of, shoulder held missile systems.

Well, how often did you fire

[00:54:47] **Speaker 6:** them? Hundreds of

[00:54:48] **Dr Mike T Nelson:** times, thousands of times, probably. I can almost guarantee something's off a little bit. That doesn't happen to everyone. They're Definitely appear to be some people more susceptible than other people, but then I'm like, okay, go just get a screen from a functional neurologist.

If it's all great and you pass, cool. We check it off the list. We don't worry about it. We move on to the next thing. If there's something there, great. Can they do any training to change it? Because we know the brain is very neuroplastic. And a lot of times people are like, Oh my God, like a friend of mine referred her to a buddy of mine in Colorado.

She had 17 concussions and she didn't really know how far off a baseline she was until she went through a lot of the work and now she's Oh my God, I feel so much better. I can multitask again. Like performance is better. Again, it goes back to. Figuring out why they're off baseline and, what direction you need to direct people,

[00:55:35] **Dr Chris Perry:** right?

[00:55:37] **Dr Mike T Nelson:** Cool. I feel

[00:55:37] **Dr Chris Perry:** like we could talk forever. We got to do this. I know

[00:55:41] **Dr Mike T Nelson:** We got a hard timeline, but we'll have to have you back on again where can people find out more about you? Obviously we work with you at rapid health, but do you have any other, I know you've got a ton of information that's always going out everywhere.

So where are the best sources for people?

[00:55:53] **Dr Chris Perry:** Yeah, I appreciate it. And so, my name is Christopher Perry. I'm on Instagram at drcperry001. I've never been able to get rid of the 001. That was a part that has been a part of my, I remember my dad did all his email addresses that way. Jperry001.

And as a kid, I was like, well, I love my dad to death. So it's like cperry001. And so. I've never been able to get away from that. And of course, when I went to go change my Instagram tag, after I finished the PhD, I was like, of course, there's a Dr. C. Perry somewhere. So of course, you guys can find me at Dr.

C. Perry, 001 on Instagram. I'm in the process of building my own. podcast. Again, as you see behind me here and so I, I was a host for one for a long time, but we've since parted directions and I wish them the absolute best and they're my old team and I love them to death. But it was time to go into a different direction.

You guys can find me at rapid health optimization where I of course work with Dr. Indy Galpin and Dr. Mike T. Nelson here. And then you can find me at ECU underscore ESS. I am the direct, I'm the co director of the podcast. of the ECU Strength and Conditioning, Tactical Strength and Conditioning Research Lab.

And stay tuned for more as I continue to build more avenues of trying to teach people as best as I can on how to better sleep and just how to better take care of themselves.

[00:57:01] **Dr Mike T Nelson:** Awesome. Well, thank you so much. And thank you for all your help and all the wonderful stuff you're doing in Rapid. And I highly urge everyone to check out all the great information you have going out.

Really appreciate it.

[00:57:12] **Dr Chris Perry:** Always. Thanks for having me. It was an absolute blast.

[00:57:14] **Dr Mike T Nelson:** Yeah, we'll have you back on. Thank you so much.

[00:57:16] **Dr Chris Perry:** Yeah, man.

[00:57:18] **Speaker:** Thank you so much for listening to the podcast. Really appreciate it. Huge. Thanks to Dr. Chris Perry for sharing all of his wealth of knowledge there. Make sure to check out his Instagram and all the great information and his upcoming podcast, all the wonderful stuff that he puts out really love all this stuff, really great information that is not only accurate and backed up by research.

It's also extremely practical because like I said, in addition to being a academic, He is actually working at Rapid Coaching Individuals, which is really great because you learn the applied knowledge that is necessary. If you want to learn his top four action items for better sleep, go to MikeTNelson.

com forward slash Flex4, F L E X 4, and that will put you on to, excuse me, the newsletter list also.

So thank you very much to him. Thank you so much for listening to the podcast. We really appreciate it. Talk to all of you next week.

[00:58:16] **Speaker 7:** That was wonderful! Bravo! How was great! Well, it was pretty good. Well, it wasn't bad. Well, there were parts of it that weren't very good, though. It could have been a lot better. I didn't really like it. It was pretty terrible. It was bad! It was awful! It was terrible! Get him away from me!

[00:58:29] **Nancy:** This podcast is for informational purposes only. The podcast is not intended as a substitute for professional medical advice, diagnosis, or treatment. You should not use the information on the podcast for diagnosing or treating a health problem or disease or prescribing any medication or other treatment.

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