

[00:00:00] **Dr. Mike T Nelson:** Hey, welcome back to the Flex a Diet podcast. I'm your host, Dr. Mike T. Nelson. On this podcast, we talk about all things to increase performance and add some muscle, improve body composition, and do it all within a flexible framework without destroying your health. Today on the program, we've got Dr. Allan Bacon.

[00:00:24] You probably may have recognized him from online. He is an online trainer living in Maui, Hawaii right now. So we talk a little bit about that. He actually has a doctorate in dental surgery from the university of Maryland and now does fitness stuff full time. He's done formulations in the past, just a real wealth of training knowledge all around.

[00:00:49] And we had a great conversation about Everything from how heavy should you train? Should you train to failure? What are the pros and cons of different movements? Should you do a warm up? What type of warm up might be most beneficial? Muscle soreness, or commonly called DOMS, delayed onset muscle soreness.

[00:01:11] And just a really good training discussion with lots of other sidebars here and there for almost an hour and a half. Often. Reality, I probably could have talked to him even longer than that. He will be presenting next year at the coaches summit in Vegas. So I will be there attending. Hope to see some of you there and yeah, so just enjoy this wide ranging conversation, Dr.

[00:01:38] Allan Bacon. And if you liked this podcast, you want to listen to more podcasts I have or get on to. The daily newsletter for a lot more my website, which is MikeTNelson. com forward slash podcast. And then I'll give you a listing of all the podcasts I've been on. It'll give you a listing of the current ones, past ones, and there'll be a place where you can get onto the daily newsletter for even more great information delivered right to your inbox.

[00:02:07] So enjoy this conversation with my buddy, Dr. Allan Bacon.

[00:02:14] **Dr. Mike T Nelson:** Thank you so much for listening to the podcast

[00:02:16]

[00:02:17] **Dr Allan Bacon:** Dr. Mike, the man, the myth of legend. Yeah, something like that. I've heard worse. How are you doing?

[00:02:26] I'm good.

[00:02:29] **Dr. Mike T Nelson:** How

[00:02:29] **Dr Allan Bacon:** are you doing? All right.

[00:02:30] **Dr. Mike T Nelson:** I just thought we'd talk about a little bit about your journey and if there's any fitness and myths that kind of bother you. So that was the topic I was thinking about.

[00:02:38] **Dr Allan Bacon:** There's tons of different fitness myths. I actually think I had a paper somewhere around here where I was talking about some, I don't, there are tons of different fitness myths that we can get into.

[00:02:47] I know that I've seen on some of your previous ones, you like talking about supplements and stuff like that. And I formulated professionally for the dietary supplement industry for 15 years. The other thing that I was thinking about talking about was for the trainees that listen to your podcast one of the things that I found that's a common issue with the people that I train or the people that I coach, do you still actively coach people?

[00:03:10] Are you sticking mainly to

[00:03:12] **Dr. Mike T Nelson:** research and. I still coach people. I've cut down on the number, like right after COVID, I took the highest amount of people I've ever had. And I want to say at one point I had 25, 26, somewhere around there. Because I was super afraid, because most people I have are trainers, like probably two thirds of them are.

[00:03:33] And so I was afraid their gyms were getting shut down. I'm like, they're gonna cancel me. So anyone who... Was interested that I felt like it's a good fit. I'm like, yeah, sure. Just take them on now. Yeah, and then everybody stayed, which was great. Yeah. So I've let it drop down to, I only have 13 now.

[00:03:48] So I keep it around 12.

[00:03:50] **Dr Allan Bacon:** So one of the other things that was interesting to me, and I don't mind taking the conversations in any direction that you want to go, because I love talking about, a large variety of things, supplements, nutrition, fitness, mindset, that stuff. The other thing that I was thinking about was people have a real hard time, and this is something that I've noticed with a lot of my clients, people have a real hard time of.

[00:04:10] Understanding the idea of pushing past discomfort to really hit that level of adaptation that you're trying to achieve to build lean muscle, because everybody comes to you and they'll say, I want to lose fat and almost, almost everyone that says that also says, I want to build some lean muscle.

[00:04:26] If it's the women, they're saying, I want to get toned. If it's men, they just want to build muscle. And particularly for for gen pop, I find that very few of them are actually lifting heavy enough to get much of a change outside of that beginner phase, in that beginning phase, you can literally do anything and it always works, but outside of that, it really starts to take dialing in your intensity.

[00:04:49] And that's when nutritional stuff falls into play. But what I was really thinking about was what. Are we seeing with athletes and clients as they're moving out of that beginner phase and a more immediate and hopefully eventually into that advanced phase? As far as, are you really pushing intensity?

[00:05:05] And is this maybe one of the major hangups that we're facing and how do we

[00:05:08] **Dr. Mike T Nelson:** address this? Yeah, let's just start there and dig into it. I record an intro outro later, so we're good to go. Yeah, why do you, so we all know that people who are just lifting, you could lift soup cans and probably get stronger, but what do you do after that sort of newbie gains wear off, but you're, let's say you're three to six months into it what do you find is a common mistake that people make at that

[00:05:34] **Dr Allan Bacon:** point?

[00:05:35] I usually find for about the first year, like you were saying, those newbie gains tend to to accumulate maybe over a year or so. Those neural adaptations, like you're talking about are really quick in those in those first few months. And then newbie gains tend to continue for a little while.

[00:05:51] And I think that People fall into a trap of thinking, okay the level of effort that I'm giving here is sufficient because I'm seeing progress and this is great. And it, they don't really realize that to progress once you get into that intermediate stage and beyond is really something that you have to develop mental toughness and.

[00:06:08] Embrace that discomfort that truly bring adaptation requires. And I'm sure that you're familiar with the research on training towards failure and hypertrophy and

[00:06:19] **Dr. Mike T Nelson:** How close Nick Byrd and right.

[00:06:21] **Dr Allan Bacon:** Absolutely. Those guys were the original people who did that. And and how the more data that comes out, the more that we see that roughly half of the beginner stage, it's about.

[00:06:32] The closer to failure, you are typically the better per set as, as long as you're also adjusting for fatigue and your recoverability. So usually for most people getting between one to two reps in reserve or so after that beginner stage is probably a good guideline. Would

[00:06:50] **Dr. Mike T Nelson:** you agree? I would generally agree.

[00:06:54] You

[00:06:56] **Dr Allan Bacon:** can disagree if you want.

[00:06:58] **Dr. Mike T Nelson:** No, I would say that the caveat I would add, which I'm sure you'll get into is. I will generally only program that for more isolation exercises. So like the leading exercise, if I'm doing a bench press or trap bar, deadlift or squat or something like that with newer people, especially online in person is a little bit different.

[00:07:20] I don't trust them for a while until I can see a fair amount of videos. So I tend to go like a two or three hour AR and I tend to be more conservative on that. And then as it gets into more accessory isolation stuff, it's how bad are you really going to mess up a preacher curl? So

[00:07:35] **Dr Allan Bacon:** you're saying from an injury risk standpoint, from a risk reward standpoint.

[00:07:38] Sure. And that's completely fine. I would agree with that there. That was my hesitation. No, that's fine. And I think that this is when we're talking about getting into that one to two RIR type range, we're talking about being a little bit more experienced than a rote beginner. And so hopefully let's assume that we have we've got decent form down.

[00:07:58] And so we're moving past that stage where we really have to be with a little bit more nuance, like you're talking about, because what you're saying is 100 percent on point. And I agree with that. And particularly when you're working with newer trainees, a lot of the times I would say, push, push until you, you really start to feel challenged.

[00:08:15] And maybe we don't even worry about that RIR, because what we're trying to do is we're trying to build that consistency with getting into the gym, getting them used to that type of, movement patterns and getting their form down. So what you're saying really makes sense as people become more proficient with the way that they move, then maybe we get a little bit more tighter with those reps and reserve ranges that we give people.

[00:08:37] And, it's interesting when we look at where people are getting caught, 2017.

[00:08:46] Barbosa Netto looked at it in 2017. And whether you are standardizing the weight and then having them go to a certain number of reps failure or standardizing the reps and having them choose the weight to reach it, people tend to be significantly off. It didn't weigh off. Yeah. Even competitive people have a tendency to underestimate their ability by about three to five reps from momentary muscular failure.

[00:09:12] And In some cases, when you look at people that are not competitive and that are journeyman type trainees, are these people that have been doing it, in their homes and want to do it for physique and health and all those overall purposes, sometimes the error selection can be off by if you're standardizing reps and you say, okay you pick the weight and then you ask them to take that to momentary muscular failure, they can be off by upwards of 11 reps.

[00:09:34] That's what Barbosa Netto found. And yeah. It's often found that people are attempting loads where they are able to do double their intended reps, and this only gets worse the more reps that you tend to do. And I think that a lot of the reason that people do this is because they feel like If they're doing significantly more reps it induces that higher degree of discomfort.

[00:10:01] And so it reinforces that idea that they really need to feel uncomfortable when they're lifting rather than instead actually getting the intensity where they need to be and hitting that one to two hour and probably progressing better with less overall soreness.

[00:10:17] **Dr. Mike T Nelson:** And you're talking about acute discomfort, not delayed onset muscle soreness, discomfort after the session, right?

[00:10:23] You're talking about during the

[00:10:24] **Dr Allan Bacon:** session, correct? During the session, although acute like delayed onset muscle soreness is probably more significant from

higher reps than it is from, hitting lower reps with more intensity anyways. Wouldn't you agree?

[00:10:36] **Dr. Mike T Nelson:** Ooh, I'd say that. And especially with more eccentric work.

[00:10:41] And on what you're not accustomed to, if I had to give a one sentence answer, but yeah.

[00:10:46] **Dr Allan Bacon:** So we have to find a starting point. And we have two issues at play, regardless of whether our goal is to gain size or strength. And we want to be able to sufficiently push ourselves near failure, but we don't want to push ourselves so far away from or so much that we hamper our ability to recover.

[00:11:04] And that's why we've been talking about in the past few years where people discuss the idea that maybe we shouldn't be going to momentary muscular failure every single set. And so a good rule of thumb, which we had mentioned before was if you are experienced and proficient with the way that you move, I think that one to two reps is a good reps and reserve target to hit, because it tends to be for me, at least the sweet spot for adaptations, as well as considering recovery and then strategically throwing in times where we go to momentary muscular failure based on where it is in the program, what we're trying to achieve and and what exercise it is.

[00:11:44] **Dr. Mike T Nelson:** So how would you program that for someone in an online environment who, let's say, is a year into weight training and you only get to see them online, how, what would you do to knowing that you're programming a one to two RER, knowing the research and knowing they're probably not close to it? What would you do in

[00:12:05] **Dr Allan Bacon:** that case?

[00:12:07] So what I do personally is I coach people to be within one to two hour in those situations, and we will do periodically intensity checks. And so what I have people do is, usually within a training block, I'll give somebody a month. I usually run two to four month training blocks where they use progressive overload over a cycle and improve on, specific lifts week to week.

[00:12:32] And so I'll typically give them one month in that training and then we'll come and we'll say, okay you've been. Running this training for a month,

which means you've had some time to adapt to it. You've had some time to test out different weights and kind of dial in where you think that one to two RIR is.

[00:12:46] And so we will spot target specific sets of specific lifts and I'll say, okay, this week I want you to take this lift. So momentary muscular failure on this set, and let's see where you end up. And, if you need a spotter, certainly get a spotter, but I want you to take this to where you cannot possibly get another rep without failure in the middle of the rep.

[00:13:07] We're not going until complete technical failure. We're going until where that, that momentary muscular failure is. And that can often give them an idea. Of where they may be in that process, because usually what I end up finding is more often than not, they end up getting 345 reps farther than the RIR intended.

[00:13:29] And so this gives people that, that idea of, okay if my guest was here and this is what it feels like to actually go to failure over time, we're hoping that they start to learn, okay this is the discomfort level that I experienced when I'm actually pushing closer and closer to this reps and reserve, because like you had mentioned, when you're working online, you have You have a little bit more of a difficulty in being able to gauge where your client is when you're working in person, you can watch, okay what is this person experiencing?

[00:13:57] Yeah. And that's where you start saying, Hey, give me two more reps. But in an online environment, you don't quite have that that, same ability. And the farther that we move the higher up in reps that we go, the ability to gauge this gets worse And so I find that Testing this for five reps and below people tend to be fairly accurate as we get significantly above five reps.

[00:14:26] That's where all hell breaks loose. And and you can be anywhere from I remember a study by regions in 2014, where they did something at 70%, one rep max. And the study varied with the with the. Trainees, where they would get anywhere from 19 to 40 reps. So if the ranges are this big, we need to be focusing in on this in some way to be able to dial these people in.

[00:14:52] And and, particularly as you mentioned in an online setting, the hardest thing that you could possibly do here is being able to get a person there without actually seeing them in the moment. And so I think that these tests are probably the best way to do it, taking these target, targeted sets to failure.

[00:15:11] And and having them test that. And I would at least do that once a training cycle, if not twice, the other thing that you can have people do is have

them tell them, okay you can let me know when you want to test this, go into your gym or wherever it is, set up the support arms, take it to absolute failure, ask a spot or take that to absolute, absolute failure.

[00:15:31] I found that having the the safety of a spotter itself. Is all the most people need to be able to bump out three, four, five more reps.

[00:15:42] **Dr. Mike T Nelson:** Oh yeah. That makes a huge difference, right? Neurologically, your brain is programmed for survival. So if it thinks you're gonna die or not make it, I've had that in my own gym, even where It's okay I know I'm in, bench rest or whatever.

[00:15:55] I know I'm in a cage. I know I'm fine. And that hesitation of the second were not so

[00:16:02] **Dr Allan Bacon:** sure, am I going to get back up after this? Yeah. Yeah. And you can use that as a way to To test yourself and I really think that people tend to get a little bit shy about asking for a spot in a general.

[00:16:17] Oh, yeah, I've never seen anybody one say no, but two people don't even I've never noticed anybody feel like they've been put out. Buy it, and as long as you offer to do the same for them, people are very happy to do this type of thing. Don't interrupt them in the middle of their set, but, people do not have problems helping you out.

[00:16:36] Particularly if you're pushing yourself, and I think that this is where we really need to go. If we want to experience the progress that we're trying to shoot for, and I think that if you want the best return for your time in the gym. This is a critical skill to learn. And I think that a lot of people aren't even familiar with the fact that this is probably happening as much as it is.

[00:16:55] If it's in controlled research, if this is happening in what people deem trainees, like people that are resistance training experienced, what's happening to everybody else that's not necessarily as far along as those people.

[00:17:11] **Dr. Mike T Nelson:** And so it's a big thing. Yeah.

[00:17:13] How do you would you tell someone to go. To momentary muscular failure, or would you tell them to go just shy of technical failure? Because one of the things I do worry about when I'm not watching some people is we've all seen this example, like example I probably brought up on this podcast before is

my buddy Adam and I went back when we were doing RKC stuff that had the tactical Strength challenge.

[00:17:38] All right. So for people not familiar, it's a one RM max deadlift. It's as max pull ups. And then the normal division for guys was as many snatches as you can with the 24 kg kettlebell. The elite division was one RM deadlift pull ups with 25 pounds, I think, and then snatches with 32 kg. Doing five minutes of snatches, a three two kg is probably the worst thing I've ever done in my entire freaking life.

[00:18:01] But but a buddy of ours came down from North Dakota. He is warming up doing the deadlift, and I think he, it was his first set, I think he started at three 15 and then all of a sudden we look and the competition started and he puts 4 55 on there. And it looked exactly like a pooping dog and we're both watching this five second round back deadlift and he made it walked away no injury and both Adam and I looked at each other and we're like.

[00:18:31] That is both equally impressive and absolutely scary at the same time.

[00:18:37] **Dr Allan Bacon:** So this is an interesting topic because the body is amazing at adapting to stressors, right? And if he has trained in the past and that upper back has rounded. If you look at some of the best... The problem

[00:18:50] **Dr. Mike T Nelson:** was he hadn't, he just got lucky.

[00:18:53] He just survived. I'm back all the time.

[00:18:56] **Dr Allan Bacon:** So if this is a survival scenario, I wouldn't recommend doing that type of thing. But, and so it depends on a couple of things. One, how experienced is that person, and is this something that they experience when they go that heavy in general? There are some deadlifters who their upper back rounds significantly, and as long as it maintains that relative brace throughout the movement, it's not really that big of an issue.

[00:19:20] And as long as the lower back is relatively braced, it's not really that big of an issue. People will, the idea of textbook form has probably stopped more people from pushing intensity than anything else. Yeah. And and so I would have a little bit more of a stance of momentary muscular failure for my body building trainees than I would necessarily for my guys that are competitive in sports.

[00:19:48] And that doesn't mean that you can't take things to technical failure. I think that taking things to technical failure can be fine if you're used to taking things to technical failure. Because as and just like your example shows, when you start to get near like real failure, your technique starts to break down quite a bit.

[00:20:07] So my question would be, is this breaking down in an area where we should be really concerned about injury risk? Or is this those natural types of breakdown? Are we getting are we getting functional knee valgus in a squat, which tends to happen? And what's really funny is Yeah. And the Chinese actually teach that to their Olympic

[00:20:25] **Dr. Mike T Nelson:** weightlifters, whereas you get torque out of

[00:20:26] **Dr Allan Bacon:** it.

[00:20:27] Yes. Whereas it's this huge, like forbidden thing in the West for some reason we're slowly coming around. The bending of the upper spine, it, like you just mentioned in deadlift is another one of those things. And so if I've got competitive sports trainees, I would be, I would say more, Hey let's get into this with competitive bodybuilders.

[00:20:46] You almost don't need to go into that range quite as much. But. To your point the idea of perfect form is probably a myth to begin with, and a little bit of form breakdown is probably not that problematic, and it probably doesn't raise injury risk that much. Even when you look at at the research to date on injuries.

[00:21:08] Form is really low on the list of things that are really, that really raise injury risk. Sleep, how you're feeling mentally, the volume at which you're doing something all tend to come in way before perfect form comes

[00:21:23] **Dr. Mike T Nelson:** into play. And on the deadlift, Constantine pulled God, what do you pull close to 900?

[00:21:29] I think with a rounded upper back, he always rounds, but he always rounds. If you watch the side view of him. It doesn't move under like superhuman loads. And so that's my argument. I agree with you that if you sat in that position and you can hold that position the whole time, you're fine. I don't really think you have much risk where I get worried is people who like pull their shoulder blades back together.

[00:21:55] They're pulling 400 for the first time and their upper back goes at the top. And I'm like, Oh

[00:22:00] **Dr Allan Bacon:** my God. Yeah. So also, like I said, I a hundred percent agree with you. And as well as how are they doing from a training standpoint, do they train with this slightly flexed position? The body is incredibly resilient.

[00:22:14] The spine is incredibly resilient. And and just like we've vilified the knee valgus, the knee caving, when it's not necessarily a problem. We've been very scared for the past 20 or 30 years about spinal flexion. And I think a lot of that goes back to the original McGill research, because at the time It was probably the best that we had to go on.

[00:22:40] But the problem with it was that it was looking at spinal cadavers of pigs.

[00:22:46] **Dr. Mike T Nelson:** Yeah, the original stuff was. And then he did some follow up work with ECG on strong men and some other stuff like that. But the biomechanical modeling was early on

[00:22:54] **Dr Allan Bacon:** pigs. And the problem with that was if you take a a cadaver spine and you flex it a thousand times, It breaks.

[00:23:01] It doesn't adapt. It doesn't adapt. And so his later research and then particularly layman who who came after him and McGill was, I think McGill was his was part of his PhD. He was the. He was overseeing his PhD research, but layman's more recent research looks a lot better as far as that goes, because when you start to look at it as a functional human, part of anatomy, you adapt so well.

[00:23:28] And Constantine is a great example of that. He's a guy that has been training progressively up in weight with that, that braced flex spine and. He doesn't seem to be at any more of an increased risk than anybody else. And this is one of those good fitness myths that you were talking about earlier.

[00:23:48] Yeah. That I think that people really get up in arms about. And I don't know if you know anything about my injury history. I broke my neck. No, I don't. I broke my neck three years ago. Oh, I broke my neck. When people who lift weights get injured, it's always doing dumb crap, right? And so I had, we had moved about three and a half years ago.

[00:24:09] We made the final permanent move to Maui and we had one of those pods and we got them sent out. And so all of our stuff came in a pod a few weeks after we'd been here. And I was, Going to be, I was going to be Superman and do it all by myself and get it all done in one swoop. The problem was the pod door opens and then there's a lip that comes down from the roof of the pod.

[00:24:32] And so I was going in and I was picking up a couch by myself. I couldn't just pick it up and walk out. I had to pick it up and then I bent my spine to get under the lip and pull it out. Immediate pop, double spinal herniation. Now the spinal flexion thing brings it up because for six months, I couldn't walk and C4, C5 isn't one of those things where you're like if the nerve is injured there, why couldn't you walk?

[00:24:59] The problem was it involved my right arm. And I don't think that people realize how much their arms move during locomotion. And so anytime I would walk anywhere and my right arm would swing, I would lose feeling in the right side of my body. Oh, intense shooting pains. And so I just didn't walk. I would get up and I would walk for 10 minutes at a time and a few times a day.

[00:25:20] And that was it. Cause it's all I could handle. And when I was doing all my rehab stuff I really started to get into Jefferson

[00:25:27] **Dr. Mike T Nelson:** curls. Yeah. Yeah. Explaining Jefferson Curls for people who, that might be a new

[00:25:31] **Dr Allan Bacon:** term. Sure, so Jefferson Curls are, this is going to be a botched way to say this, looking it up on YouTube will help you a lot, but this description will help too.

[00:25:40] When you are doing Jefferson Curls, it is essentially a Deadlift where you're accentuating the eccentric, the lowering phase with a rounded spine, you take it to end range of motion many times. If you've got really good mobility, maybe you stand on a box because you're holding a bar and you want the plates to be able to go as low as possible.

[00:26:01] And then you slowly reverse the motion. Out of flexion as you come back up. So we have this movement that is specifically focused on spinal flexion. And if the reality of the situation was the spinal flexion was something that was a major concern, this would be that exercise that would cripple everybody, but it ended up being something that was key to my rehab.

[00:26:24] And and when I was first diagnosed with this injury, they did the MRI and all that. The first doctor looked at it and he said, you know what, you're never going to be able to lift again. And, and it sucks for you. And I was like, that's not what I'm looking for. And so I, yeah. And so I flew to I flew to Queens medical center, which is for those that aren't familiar, it's on Oahu, it's in Honolulu, and it's the premier medical center for all of Hawaii.

[00:26:50] And I was able to talk with a neurosurgeon there who was experienced with working with NCAA division one college football players. And and he looked at it and he said, this is one of those injuries that if you have somebody that had no training history, you would look at and you would say, okay, that this could be lifelong debilitation, but I can tell you that, having worked with athletes, you have a remarkable ability to recover.

[00:27:16] And, one of the things that he had recommended after doing a few weeks of the a few months of the the rehab stuff was starting to get into some more Jefferson girls. And it saved me, I went from, not being able to walk to gradually, you start really low.

[00:27:32] Like I said, you progress this up, you start with the bar or, bumper plates that are like 10 pounds on each side. And then you slowly,

[00:27:39] **Dr. Mike T Nelson:** for some people, a dowel or a 15 pound aluminum bar,

[00:27:43] **Dr Allan Bacon:** Whatever you need to do that allows you to do this in a manner where you can progress up. The weight over time.

[00:27:50] And I think that people get concerned about the injury risk with this type of stuff because they immediately throw on what they can conventional deadlift. And they're like, man, my back really hurts. Yeah, of course it does. And that, that progression really makes a huge difference in this type of thing.

[00:28:07] And and yeah, for, I see the same thing with knee injuries, people always have a tendency to fearmonger leg extensions, but I find that leg extensions are used pretty regularly in, in rehab scenarios, but you're going to, you're going to be focusing on the eccentric when you do it, in a lot of different ACL type.

[00:28:27] Injuries, people don't say, Hey, you can never do this again. It's okay. Let's modify this. Let's progress this up slowly and take advantage of, the isolation

[00:28:34] **Dr. Mike T Nelson:** movement that it is. Yeah, I would agree with that. And on Jefferson curls, I remember talking to Olympic coach for gymnasts, Christopher Summers years ago about this, and he was saying I could get the numbers wrong, but I want to say, he said, even his worst gymnast when he was a full time coach, could Jefferson curl, at least their body weight.

[00:28:55] But I asked him, I said, how long did it take you to get them to do that? And he's two to three years, right? Yeah. And these are, elite level Olympic caliber athletes, right? But even then it was years, not weeks, not months, years to get to that point. And they did them like literally almost every

[00:29:15] **Dr Allan Bacon:** training session.

[00:29:17] So it's funny. The reason that I brought up Jefferson curls to the neurosurgeon was because my wife was a competitive Olympic. Lifter. Oh, interesting. And in 2019, she went to she went to Worlds and placed, she got silver in Worlds for her weight class and and held the American record in the snatch for her age group and weight at the time.

[00:29:37] And and it's funny when we were doing, we do I'll periodically do exercise demos for Instagram or our YouTube. And then whenever I write programs for people, we give a video demo so they can see it. And when I was doing it, I was like, you are much more flexible than me. You do the Jefferson curl demo.

[00:29:53] I'll just narrate over top of it because if people see my type of of mobility trying to do it, it's going to look really bad, but it's funny to see her do it as an experienced Olympic weightlifter who, like you said, apparently this is something that they've queued in on. They have a lot of spinal loading in the lifts that they do.

[00:30:10] Oh yeah. And they've queued in on this decades before a lot of the other lifting modalities have, and it's a wonderful lift. And I think that anybody that's looking to bulletproof, I hate using that term, but bulletproof, their injury risk for the rest of their lives.

[00:30:24] It's a wonderful lift to incorporate into your training. And maybe you don't need to do it on those days that you're like, okay I've dedicated. Three or four days to building strength or maybe hypertrophy. Maybe you do it on like an off day that you're going to go in and do cardio. And then you use this as one of those, as one of those skill type movements or injury risk reduction type movements,

[00:30:43] **Dr. Mike T Nelson:** if it fits into that programming.

[00:30:46] Yeah. You can also even look at like the Ben press, if you're using kettlebells or a kettlebell windmill, like the first time I saw those movements years ago, I was like, Whoa, what the hell is that? That's a horrible movement. And then. If you do it correctly, it actually feels pretty good.

[00:31:04] And I don't have any research on this, but I think the bottom position of a kettlebell windmill, if you think about actual spinal extension, whatever that looks like, I don't feel a lot of compressive load. I actually feel the opposite which is interesting. So a lot of times I think. If you look at the Jefferson deadlift or a straddle deadlift, I've lost count of how many people I've worked with who had back pain, who couldn't normal deadlift, couldn't conventional deadlift, even if their form was good, they could Jefferson deadlift though, or granted, lightweights, that kind of place to start.

[00:31:38] And you look at that, where you're straddle deadlift, you're rotated, you're like, this is stuff that gives, Stu McGill nightmares. Huh. Most of them didn't have any back pain to do it. And so I'm like, yeah, just start light. They're like, what? I can't do that. I'm like, did you have any pain at all whatsoever?

[00:31:53] They're like, no. Okay, so what are you worried about? I'm not saying start at your max load, for God's sake. Just start at 135, because your tissue is not ready for any loading in that area. And just see how it goes. The people who did it, shocker, they got better, and what's cool is over time, not all the time, but half the time I would say, their back pain went away, and they could go back to conventional and sumo deadlift later,

[00:32:19] **Dr Allan Bacon:** but not right away.

[00:32:20] And part of that may be, pain science is really interesting.

[00:32:23] **Dr. Mike T Nelson:** Oh yeah, it's such a

[00:32:25] **Dr Allan Bacon:** swamp. It's such a, yeah, it's such a damn hole to like to get into, but pain science is really interesting. And one of the things that I think is really cool about what you brought up and how you're doing that with your clients, or how you've done it with those people.

[00:32:36] A lot of the time, yes, there are benefits to those movements. And maybe I should have been doing more straddle deadlifts, because that might have saved me from injuring myself in the pod when I switched my spine up.

Hard to say. But I think what's really interesting about that type of thing is when you find that type of movement that is similar to some of those other things and you're able to do it without pain, I think it removes a lot of those expectation effects, which is a huge part of the experience of pain.

[00:33:06] What we expect. Is a big part of the, how much we report, we feel that level of pain, how much we report, we experienced that type of pain. And and I tried to use that to my advantage when I was injured because I kept telling myself this doesn't hurt. And I actually believed it.

[00:33:22] I was like, this should have healed two months ago. What is what's going on this entire time? But I think that one of the reasons that what you were putting into play. Probably worked was it showed them that they could get into these positions and they could go through these movements and it doesn't have to hurt.

[00:33:39] And so relieving some of that tension and relieving some of those expectations. On top of the fact that you're building up their soft tissue, you're building up supportive structures, you probably benefited them, very significantly in the, in that respect

[00:33:54] **Dr. Mike T Nelson:** as well. Yeah, with the pain stuff, like my little thing I tell clients is or trainers even, it's okay, I don't expect you to be a pain scientist.

[00:34:01] I'm not expecting you to be a physical therapist for God's sake. If you need to refer out, just please refer them out to a professional. Don't try to fix everything yourself. The simplest thing you can do is, if they have any pain at all, just tell them not to do that exercise. One, it's a liability. Two, there's nothing really good that's going to come of it.

[00:34:21] If you have a mechanical issue, you're going to make it worse. If you have any neurological association with it, you're going to make it worse. And I would say, 50 percent of the time, if you just avoid that, right? And these are people who are cleared they don't have a disc rupture, or they... They can't find anything quote unquote wrong with them per se, 50 percent of the time they just spend two, three months doing stuff.

[00:34:42] It's not painful. They're good. Yep. Fixes, fixes the entire problem. Yeah. And you could argue then did they have a true mechanical issue? Did they have, their nociception, got all crazy and central wind up and blah, blah,

blah, all this other stuff. It doesn't matter really. If they're better and they got out of pain and you covered yourself from a liability standpoint.

[00:35:07] It's a win

[00:35:09] **Dr Allan Bacon:** they're never going to figure that out anyways, because by the time that training cycle ends and they've done the, Jefferson curls or straddle deadlifts or whatever it is, it's either that there's been enough time that your body has healed up because what 86 percent of lumbar spinal herniations spontaneously recover within two years.

[00:35:27] Anyways. Yeah. So these spinal injuries in particular, at least the lower back ones, I haven't seen any data on the upper, but at least the lower back ones, they're not a death sentence. And one of the worst things that you could possibly do is stop moving. Yeah. Motion is lotion, right?

[00:35:46] And so get in and get this stuff done and you'll be just fine.

[00:35:50] **Dr. Mike T Nelson:** And I'm sure you've seen the studies where they did. I think it was low back. They MRI'd a whole group of people. They sent them to radiologists to read and they're like, Hey, tell us what's going on with these people. I can't remember the exact stat, but I want to say it was something like 39 percent of the people that came back and said, Oh, you've got this disruptor.

[00:36:07] You've got, some abnormality on the MRI. You should have a lot of pain. What they didn't tell the radiologist reading it is that, Hey, we just sent you all asymptomatic people. We just pulled people off the street and jammed them in an MRI. They were all asymptomatic, had no symptoms at all, and you're like, holy

[00:36:25] **Dr Allan Bacon:** crap.

[00:36:26] So my neurosurgeon actually brought up that exact fact when I was talking to him. He goes, he said that, if we went down your spine, everybody that lifts or plays a contact sport, he's your imaging is all screwed up. And so whenever we see this stuff, it. How much can we really understand by looking at this?

[00:36:45] They're like, we can give you broad strokes, but if you're not in pain, it's not a problem. And, particularly with some of these these bulging discs or exposed discs sometimes it will naturally essentially resect itself. And heal up.

And a lot of times that's probably what's going on with these spontaneous healing situations.

[00:37:05] And it's just amazing to me that it's anywhere from about 66 to 86 percent that heal on their own. And, if that's the case, great. I think that people have a tendency to give up and look at this as a lifelong sentence when. The right move is try to get back and do what you can do.

[00:37:20] Like you said, avoid the things that are really problematic. And even when you look at the rehab research, it's not that you want to avoid pain entirely. Because when you bring rehab type movements that are, don't do this yourself, but go to a, a qualified physiotherapist. And when they come out with the, this is the plan it seems that taking things just to the point of feeling a little bit of pain causes a Better overall recovery than being pain avoidant.

[00:37:51] Now, like you said, that doesn't mean find an exercise that causes you pain on literally every rep and then try to do that. But it does mean find something that you can do and bring it to where to your threshold and then say, okay I've done

[00:38:02] **Dr. Mike T Nelson:** what I need to do. Yeah. And that gets into the whole kind of thread inoculation.

[00:38:07] And do you make sure you're in a safe environment, make sure there's no mechanical damage and make sure that there isn't any issue with it. Cause you're obviously working with a qualified professional. Yeah, I would agree in that circumstance, a little bit of pain, probably not that. I'm worried about it.

[00:38:24] But again, you're doing that in my opinion to reprogram your nervous system, right? You're doing it to say, okay, here's the threshold. So we're going to back off from there. Okay. And then we're going to go a little bit further and then we're going to back off again. We'll go a little bit further and back off.

[00:38:38] And then over time, you're increasing your amount of pain free function. Unfortunately, as most meatheads go to the gym and they're like, Oh, yeah, I still be fine. And yeah, so that's why I'm like, don't do anything

[00:38:53] **Dr Allan Bacon:** that's painful. So the problem is I fall into that category. And so when I was injured and I was like, man this shouldn't be an injury.

[00:39:01] I should keep doing this. I was like the pain expectation is not there. If the pain just seems to exist. Still, so it's, there's that you find that, that healthy middle to where you're being smart about your training and you're taking things to the right point. And I think that when you get there, then you really start to see some

[00:39:16] **Dr. Mike T Nelson:** good outcomes for these.

[00:39:18] Yeah, I actually view when your body is functioning the best, if you make a wrong movement, you actually want a massive amount of blinding pain immediately to tell you, you made a wrong turn. So you stop doing it. And if you've ever had that, and then you stop and do something else and it goes away. You're probably good, right?

[00:39:42] Because of the whole nociception and pain doesn't actually mean you're damaged. It's your body predicting that if you keep doing this, some bad shit's gonna happen to you. So we have this safety area, which again, people can definitely override and completely injure themselves. Especially contact, high velocity, that type of stuff.

[00:40:04] But even just educating people that... Just because you have pain doesn't mean you actually have physical damage. It's like your body is trying to protect you from potential damage.

[00:40:18] **Dr Allan Bacon:** Yeah, that's that's how the whole, stretching works too, right? Because most, most stretching is the benefits from most stretching exercises, or even things like lacrosse ball mobilization or those other things are neural inhibition more than anything else, it's protective reflex.

[00:40:34] Yeah. And so

[00:40:35] **Dr. Mike T Nelson:** just like you were, I think static stretching is like probably the stupidest thing people can do.

[00:40:40] **Dr Allan Bacon:** It doesn't have it clinically. There's not a whole lot of. apparent benefit to it. And, it's probably the most over prescribed thing in

[00:40:50] **Dr. Mike T Nelson:** all of fitness. By far, like most of the studies show, okay, yeah, like you did get a range of motion increase.

[00:40:57] Like you do the old school sit and reach test, right? They've done this twice now. And people are like, oh, but I did a static stretch for 60 seconds

and look, I can reach another half inch. But you got that because you made your nervous system

[00:41:10] **Dr Allan Bacon:** stupider.

[00:41:12] **Dr. Mike T Nelson:** You inhibited the end range of motion because in the study, you're told to go to a discomfort of a 9 So when you're stretching, you're desensitizing that area.

[00:41:23] So when you go to a 9 out of 10 again, you can go a little bit further. But to me, you made the muscle weaker. You're not stretching what you think you're stretching. And number three, you actually made yourself stupider, so to speak, like if you wasted your accuracy at end range of motion, it's worse, not better.

[00:41:42] So anyway, I just think static stretching is like one of the stupidest things

[00:41:46] **Dr Allan Bacon:** that's still around. It's one of those, you were talking about the fitness myths that still are pervasive today. It's one of the big ones. And. And it's funny because anytime you bring up the topic and you talk to a person that hasn't really looked into the research and you mentioned, Hey there's little to no backing that static stretching reduces injury risk.

[00:42:05] Oh, yeah. And and you cause an immediate. Visceral reaction from people. They hate hearing that people hate hearing that they've spent hours and hours doing something. That's probably not incredibly beneficial for the reason that they're doing it. And then they bring up the fact I just want to, be more mobile for whatever my lifts are.

[00:42:24] And then you bring up the fact that, lifting and range of motion underweight is probably just as effective.

[00:42:29] **Dr. Mike T Nelson:** Way more effective, I would argue if

[00:42:31] **Dr Allan Bacon:** it's done correctly, I, it's a much better use of time because you're experiencing a lot more adept patients. The studies that I can recall offhand suggested that it was on par with heavy static stretching, but the reality of the situation is heavy static stretching.

[00:42:49] Even when you look at the amount of time that's needed, it's five minutes per muscle group per week in total.

[00:42:55] **Dr. Mike T Nelson:** Yeah. And that's on the low end. If you look at some of the stuff that actually resulted in potential tissue changes. Some of those studies, you are holding lifts for positions for three to five minutes, multiple times, 20 to 40 minute blocks.

[00:43:10] It's just

[00:43:11] **Dr Allan Bacon:** stupid. Yeah. I was saying that the five minutes per week split over a few sessions is what it was. One of the studies that I recall is five to 10 minutes split over multiple sessions for an entire week beyond that. Yeah. You're not getting any other benefits for mobility. Now you're probably going to reach those same benefits just by lifting.

[00:43:32] Under load to, to end ranges of motion anyways. So not only are you, are people probably doubling up on this mobility work when they're lifting and they're doing this type of stuff, but they're taking it far beyond where they want to, where they actually need to go. Because if we can get this optimally done in about five minutes per muscle group per week, without, without weightlifting in play why are we spending 45 minutes, seven days a week before we even begin to lift a weight?

[00:44:04] Oh, totally.

[00:44:05] **Dr. Mike T Nelson:** And I would also even argue, what are you doing static stretching, right? People are like, Oh, I'm doing a pectoralis stretch. Okay. So if we go with the standard, thing that's told, okay, you got more range of motion by doing it because you made the muscle weaker at an end range.

[00:44:26] Last time I looked, almost all injuries occur at an end range. I don't want to be weaker at an end range. I want to be as strong as possible at an end range to reverse whatever external load was placed on me. And that doesn't guarantee you're not going to be injured. If you have a bigger load than what you can handle, of course you're gonna get injured.

[00:44:43] But at least I want to hedge my bets towards that end of the spectrum, which you're back to again, lifting weights, full range of motion, trying to reverse motion again and increase strength.

[00:44:54] **Dr Allan Bacon:** Yeah, and I think that people also place a a little bit too high of a value on being extremely limber.

[00:45:00] And I say that because. Some muscle tightness is actually a beneficial thing, particularly when you're trying to generate force. And what you were referring to was good sprinters essentially. Yeah. Or this is a really bad one, but one of the sites that I remember was in, in power walkers, if they were way too, they were really bad at it.

[00:45:19] Yeah. But it's interesting because having laxity. In musculature is exactly not what you want to do. And it's, this is a, this is not an, this is not an apt analogy, but it's one that I like to use with gen pop because it actually makes sense to a lot of people when you stretch out taffy, does that seem like it would be a strong thing, and essentially if you were, if you're.

[00:45:42] If you're taking a lot of time to static stretch before you go and lift weights, there, there's countless studies that show that the performance decrements at least for 10 minutes after you've static stretch for a long period of time. We static stretch for 45 minutes and then we have to wait 10 minutes before we can even start to do lifts.

[00:45:58] It would have just been nice if you did three sets of bench press it, 50 to 60 percent weight until you, we're able

[00:46:04] **Dr. Mike T Nelson:** to go. Yeah. So the question then is, do you do anything in different? Do you do any neural activation things? Do you do mobility stuff? Do you just start with a lightweight?

[00:46:15] **Dr Allan Bacon:** What do you do? So I think that a lot of this is overcomplicated. Especially for the majority of people. And I think that dynamic stretching is perfectly fine. I think that warmups the idea of warming up is good. So how do we do that in an efficient manner? And for some people, that's doing a dynamic stretching routine.

[00:46:33] That's what they like for other people. It's literally just going in and doing some sets of whatever movements they're going to be doing at a lighter weight and progress up. And I have no problem with it. Anybody choosing either of those, as long as they feel comfortable with getting into the positions that they need to get into that they're going to be working in, there's no reason that somebody needs to try to gain hypermobility just for the pure fact of getting hypermobility.

[00:46:58] If you're a squatter and you can get to parallel or just below parallel, let's say that you're a power lifter and you can get just below parallel where you need to be. To be called a good lift. I don't really find a benefit in people trying

to take the time to be able to squat ass to grasp for something that they don't necessarily need to do.

[00:47:16] Now if you're, if your mobility comfortably allows you to get low, go to your end ranges of motion and do that, or your sports or whatever your goals require. Yeah. What, whatever your goals are. Yeah. Certainly do that But, if you're asking, what do I have clients do?

[00:47:29] I have, I give them in their programming a dynamic routine and I actually split it. I have an upper dynamic routine, a lower dynamic routine, and I give instructions on how to blend them. If we're doing a whole body day, if we're doing only an upper day, if we're doing a lower day, whatever it is, or I give them the alternative of what I just said with, Hey, you.

[00:47:48] If you want, if you're benching this day, if this day is say we split it up more like a bodybuilder display, we're a hypertrophy focused person and the person's going to be doing chest and triceps or maybe a push day, okay, we'll go in and do some sets of bench press as long as you feel warm. Able to go and able to get into the position that you want to be in either thing works well for me You know, do you have anything specific that you would do for neuromuscular?

[00:48:11] Excitation.

[00:48:13] **Dr. Mike T Nelson:** I've tried everything because I have a bunch of eye issues. I had a Laundry list of injuries from pulled hamstrings to broken wrists ankles from mountain biking kiteboarding You know all sorts of crazy shit luckily Last 10, 12 years I've been okay. I tried static stretching, foam rolling, joint mobility.

[00:48:32] I, at one point years ago, I literally was at the gym for an hour doing before I could lift a fraction of what I lift now. And again, I don't lift, I would say super impressive weights or anything like that. So this is a topic that hits home for you. Oh yeah, because I tried everything, like I, and I, long story short, the three things that helped me the most, I did get some benefit from some dynamic joint mobility stuff that did help a little bit going to a clinical neurologist to get my interaction between my eyes, my vestibular, my proprioception system figured out, made a huge difference.

[00:49:12] How do they do that? In my case I don't see real well in binocular. You've got two eyes, right? Yeah. Two eyes in humans are offset a little bit.

Because of that offset position, they both send a signal to the visual part of the brain, which is in the back. And they have imagine two images, two squares.

[00:49:28] But because your eyes are offset a little bit, the images are slightly different. And your brain will then fuse those images together and create 3D vision. In my case, when I was a kid, I had a lazy eye or a strabismus. So I had one eye that would just disappear out somewhere else. When I was four, they put a patch on the good eye to make my other eye track and do more work.

[00:49:51] And then my eyes tracked together. They said, Hey, you're great. Don't worry about it. Never thought about it again until I tried to learn to drive a car and almost killed my parents, scared the shit out of them. Because I couldn't tell how far cars were coming towards me. As a kid, I hated ball sports. I just...

[00:50:09] I assumed some kids were not athletic and you just get hit in the face with balls, and I just thought that was me. I didn't know, I couldn't see where the ball was. Like, literally couldn't see where it was. So fast forward to, I was in my mid twenties, I did some training through Dr. Cobb, through Z Health, and they had a sports vision course.

[00:50:26] So I'm taking it, and they're doing all these tests, and everyone's Whoa! Your eyes are so crazy! The whole class Dr. Thumbs over there Hey, test this guy's eyes! Look at this crazy shit that's going on! And... I remember after a day of everyone like playing around my visual system, like I was so roasted.

[00:50:44] Like I got up the next morning, I had a liter of coffee. I probably could have taken a nap in the corner of the room. Like I know you can argue whatever CNS fatigue is in air quotes, but if you've ever had that sensation where you just went in and did low rep training and your joints felt good, but you felt like you got hit by a truck, but you can't find anything quote unquote wrong with you.

[00:51:05] That's exactly what I felt like. I just felt like I could take a nap. But I didn't have any other fatigue at all. So long story short, I realized, he's asking me and he's Have you had any visual issues? I said, yeah, I was a kid. I had a lazy eye. I had a strabismus. He's Oh, okay. And so on a simple Brock string, I can't fuse any images together.

[00:51:23] So at that point I realized, Oh, and then I started thinking back, learning to drive a car, trying to learn to kiteboard, playing sports. What did I gravitate to weightlifting? So I can hold on to shit, I'm like, instead of using the

visual system and so long story short, going forward. I actually ended up working through the Kerrigan Institute that does clinical neurology.

[00:51:44] In all honesty, one of the main reasons I did that was, I'm like one, it's just fascinating. Two, they're just an awesome group of people. And three, in my head, I'm like, if I ever get really stuck and I need help, I'm with all the nerds who can help me now. Obviously, I called one of the guys here, did a couple sessions, ended up doing a whole Week of like basically neural rehab where you come in three times a day.

[00:52:10] They work on stuff and the short version is in my case at that point. They have these goggles they can put on and they can look at how your eyes move with no light. They use an infrared camera. And in my case, my eyes were doing this really hyper fast like torquing motion under basically no stimulus, which they shouldn't do, right?

[00:52:28] Your eyes should be, in the middle of your head. Yeah. And so he's I think you're getting an error from your vestibular system is firing into that part of your brain telling you that you tilted your head. But you didn't tilt your head, right? Because when you tilt your head, your eyes will torque the opposite direction to stay in the middle of your head.

[00:52:46] And so he's I think you need more vestibular, balance inner ear work. Long story short, we did that for a whole week. Re measured me at the end of the week on Friday and my eyes actually stopped torquing. HRV went up, resting heart rate went down. I wasn't able to entirely see in 3D, but...

[00:53:04] When I would do jumps like kiteboarding, I could now tell when I was coming down. Or there's also an auto lift function in the vestibular system that'll tell basically rapid height differences. If you were to close your eyes and go in an elevator and drop real fast, it can detect those changes.

[00:53:20] Yeah. So anyway, I got quite a bit better doing all that kind of stuff. So long story to show how this goes back to all my movement issues. I ended up doing some stuff through be activated, which is through Doug Heel out of South Africa, which they later repurposed as RPR, reflexive performance reset.

[00:53:38] And that made like a huge difference. So the first time Doug reset my eyes quick story. So we're at this training and so Cal Deet's convinced me to do this. I was doing my PhD at the University of Minnesota. Cal was next door all the time. So he would come over to the lab and we would harass each other all the time.

[00:53:56] So he comes over to the lab one day and he's Hey man, I got this guy from South Africa, he's coming in to do this cert for 1, 500, you gotta go to this thing. And I'm like, what are you talking about? I don't want to pay some guy from South Africa 1, 500? What is this? He's crazy shit, man, crazy shit.

[00:54:14] And I'm like, okay, sure, whatever. If it was anybody else on the face of the planet, I'd be like, screw you, I'm not giving you 1, 500, whatever. I go to the cert, Doug Heel was doing deactivated training, get to day two, do the visual stuff. So he's okay, anyone here have visual issues? So like Cal's pointing to me, I raise my hand.

[00:54:32] I go up there and basically they do AK so AK testing, where they're just doing muscle testing and they're having you look far away, do all these different visual tasks. And so every time I do any visual tasks, like I just go weak. And he's he's close your eyes. So the second I closed my eyes, like everything works better.

[00:54:52] And he goes, Oh, you're a functional zero. I'm like, functional zero. We only learned about one, two and three this whole weekend. He's you get better by cutting your visual field. He's that's not how the body should work. He's go sit back down. And I'm like, go sit back down. I'm like, aren't you supposed to fix me?

[00:55:10] I'm standing here in front of the whole class. And he looks at me and he goes, You're so fucked up. I don't know if I can help you. So go sit down, work with somebody else first. The other guy goes up, goes through a bunch of visual stuff, brings him back up, and they basically reset my vision. So he had me play catch with a ball with little letters on it, and I had trained myself at that point to be able to do it, but it was very a conscious, competent thing.

[00:55:38] So after they did a bunch of stuff, they reset my eye position, I could literally jump and catch a ball and see all the letters of it coming in. And literally, up until that point, I had some prison glasses from PRI from Ron Hraska, Postural Restoration Institute, and those helped with my movement because they would adjust the visual field to make it more even.

[00:56:01] And then since I got adjusted by Doug the prison glasses, every single time I put them on, they fucked me up. That's actually a normal person is what they should do, right? That's actually probably a good sign. Yeah. So it was a good sign. So I actually never had to wear prison glasses again. So all that long story short to say, I found that the RPR just doing the self targets on yourself, even without the visual stuff makes like a huge difference.

[00:56:25] I've even had lifting, I've tested velocity, I've tested HRV, I've tested rest and heart rate, I've tested metabolic stuff. And, I don't know, man, like, all of it on people definitely seems to get better. And everything just feels easier and feels like it's working the way that it should. I could go under a load and do a slow grinding lift most of the time and know that it felt good.

[00:56:50] Where previous to that I would never do that. I felt like I was just gonna destroy myself in the process. I basically do RPR.

[00:56:58] **Dr Allan Bacon:** Do you have a, is this always stuff that's done pre workout or do you do this

[00:57:03] **Dr. Mike T Nelson:** in off time? Yeah, that's a good question. Normally I do it before lifting because if you think about stress, so stress is going to imprint stuff faster, for better or worse so trauma is basically an extremely high stress event that imprints certain things on you.

[00:57:19] There's also post traumatic growth, which can happen from high stress events, not necessarily PTSD. But so lifting is going to be a higher stress thing. So I'll do it before lifting because I want to help imprint the better movement patterns. Sometimes I'll do it before sleep. Sometimes I'll do it on my off days if I've just been sitting, too much or that type of thing.

[00:57:37] So there's different times you can do it, but generally, free lifting, but I have done it at other times. Last part on that, if you want to get really crazy down an interesting rabbit hole, you can do it in between your lifts. And what I've noticed, and Cal talked about this too, Cal Deets, you don't see nearly the degradation in rep count that you would otherwise.

[00:57:59] If you have a decent aerobic base, you're not, even if you go to failure, like the amount of drop off you see, is it nearly as profound, which is crazy.

[00:58:09] **Dr Allan Bacon:** How much are you spending as far as your

[00:58:10] **Dr. Mike T Nelson:** rest periods? I used to do all sorts of calculator rest periods. And then probably five years ago, I just went with the biometric method.

[00:58:19] So I'll wear a heart rate monitor. Yeah. Heart rate. HRV. And if it's a main heavy technical lift, I'll wait till my heart rate probably gets 85. If it's an

accessory lift or something like a pec deck, 100, 110, like I don't worry too much about it at that

[00:58:37] **Dr Allan Bacon:** point. I'd be interested to see because, any most of the stuff that's out for for exercise.

[00:58:44] Science, they do it by time, right? I'd be interested to see your rest periods, to see how long, if you were to time them, to see how long it would take you to get down to say 85 beats per minute. In those compound lifts, because that would, I would be interested to see if that translates to the three to five or so general minutes that they recommend between strength work versus the...

[00:59:07] I

[00:59:07] **Dr. Mike T Nelson:** can tell you it's way less. So if my aerobic system is better, which it is now, like I just did a session day, I alternated between doubles on bench press and triples on a axle deadlift. And I did another accessory lift with that. So the axle, I did eight sets, I think. So you're supersetting? Yeah, supersetting in probably 45 minutes total time.

[00:59:32] So I'd say most of the time when I start out, it's one to two minutes, but then it'll get progressively longer. And then at some point I'll find it just goes off a cliff. So I'll just stop at that point.

[00:59:45] **Dr Allan Bacon:** And that's a good guideline for when you're finished with your training. If we're going to be looking at fatigability, maybe that's the point where you say, okay I'm going to be doing more.

[00:59:54] I hate the term junk volume because it's not entirely accurate, but in a, in essence, I may be doing essentially more junk than highly effective

[01:00:03] **Dr. Mike T Nelson:** sets. Yeah. And so here's an example. Like I did. A single, double triple, four, and then five reps on the axle. And that was at 255, double overhand, so two inch thick.

[01:00:19] And I said, okay, that's pretty good. I got five, that's a PR, so I'm going to go up to 275. So I go up to 275, hit an easy single. . But then after that I only got a half rep the next time and thought, okay, I just haven't rested long enough. So I rested eight minutes. I barely got air off. I air with it at that point.

[01:00:38] So I said, okay, I'm probably done. I did 23 reps before I got to that point. Yeah. So I generally find like it'll go up, it'll do good, it'll plateau, and then at some point, It just goes off a cliff and yeah, so I just, I try to stop right before that point, but sometimes like today, I just tested to see, did I find it or not?

[01:00:58] **Dr Allan Bacon:** So I like the idea. I'm interested to see more of the HRV stuff as that comes out over the years. I'm also interested to see how the how bar speed measurement.

[01:01:07] **Dr. Mike T Nelson:** Yes.

[01:01:07] **Dr Allan Bacon:** Velocity based stuff. Yeah. I like the velocity based stuff. Not that we're really va very, we don't know a whole lot yet. I, at least I don't see based on the research that's out there that we know a whole lot or how to meet to practically use this.

[01:01:22] But I think that's one of those potentially very beneficial avenues of research to see how can we start to monitor these things and then adjust programs accordingly. Because I think that you're gonna start to notice a trend. With velocity and, fatigability and how is, how are each set, how is that laying out as far as where am I going to be able to take this?

[01:01:42] And at what point should I probably start to think, okay my day is done because progress

[01:01:47] **Dr. Mike T Nelson:** is going in the shitter. Yeah. And Brian Mann's got some pretty good stuff on that. And I would say. Based on his work and just a little bit of me playing around with it. We've got a pretty good idea for main performance lifts.

[01:02:01] The caveat there being the goal is rep speed. So with Dr. Menhouse we played around with in Costa Rica, trying to figure out. If you're doing meathead type hypertrophy type training, does, is velocity useful? And we're basically no. Even if you try to map it to an individual, you could make an argument that you do the inverse.

[01:02:27] You... Literally go to the point where you just are grinding out a rep at an incredibly slow pace. Because that's probably a pretty good marker of fatigue or you're right next to failure. But again, that's extremely individual variable. Some people can grind through stuff pretty good. Other things like my buddy Serby, like he would hit, and I'm similar this way.

[01:02:53] It, my end reps sometimes for speed to look almost the same as they were before. I just go good, whoop, off a cliff. That's what I do. Yeah. But in general, like on a deadlift, like on a trap bar deadlift, I can grind something out. On a normal deadlift? It's either there or it's not.

[01:03:12] Yeah. I don't know. Maybe people are just wired differently. I don't

[01:03:14] **Dr Allan Bacon:** know. I have a tendency to perform the same way that you do. I I look extremely good. Like I'll be benching or squatting or whatever it is. And I'll look extremely good. And the guy will be like, you've got two left. I'm like, no, I don't.

[01:03:27] I can feel it coming. And and it's for most people, I find that it's not quite as dramatic as what my drop offs look like, but I look really good for this really heavy weight. And then you can tell, Hey, if I go down another time, I'm not

[01:03:40] **Dr. Mike T Nelson:** coming back up. Yeah. How much do you want to spot this?

[01:03:44] Yeah. And it's even crazy with grip stuff too, because you'll add like. Half a pound sometimes on lifts and it'll just stay glued to the floor, where you just did it before. Like no problem, so it's just weird how, some stuff, and that's probably more of a neurologic thing than anything else.

[01:04:01] You just, the curves are completely different for everything

[01:04:04] **Dr Allan Bacon:** too. So one other thing that I wanted to mention since we had talked about we had talked about the people's ability to gauge their, how close they are to failure, getting that into the right spot. I think that the other thing that's really important and the other side of that coin is actually monitoring your progress and and seeing how do we know whether or not we're moving in the right direction because once you're outside of that beginner stage.

[01:04:33] Where you can see progress very distinctly. Okay. Then what do we use as our guide for actually progressing in the intermediate and beyond stages? And this is going to be something that I would love to see what you do with with, yourself and your clients, because I think that every coach, I there's, I don't think that this is standardized.

[01:04:52] And I think that every coach has their own ways to do this. And what I like to do. Is monitor for things perceived exertion, soreness and fatigue

performance and actually pumps. And I think that these things as a each one of these things as an individual data point probably isn't.

[01:05:16] A great indicator of whether or not you're progressing or not, but all of them together can give you a more complete picture. And what I look for with that is for the first one, perceived exertion. I like to push the difference that we were talking about before the warmup sets and working sets are distinctly different.

[01:05:33] And if you aren't struggling by the end of even your very first set, it's probably still a warmup. I think that when people are given five sets, I think that in the majority of the time, those first two sets that they do are probably still warmups because they're like, yeah, I got that.

[01:05:49] That was pretty good. You were probably, five, six reps off of a failure. And that's it in the intermediate stage and beyond that's just too far away for that to be a working set. Then soreness and fatigue. I look for signs of modest postsectional exercise, soreness or fatigue in muscles that tend to get sore in those people that tend to get that not all muscles get the same type of soreness or fatigue.

[01:06:16] Even for each person. So it's not a definitive sign of progress, but something that can be monitored if you notice that you have that tendency and also obviously watching out for extreme cases of soreness and fatigue from workouts, because that's usually a sign that it's probably time to dial back some of that volume if we're really digging into recoverability from those movements for performance, I tell people to look for at least.

[01:06:40] Progress being maintained or slow progress over time. And the more experience that you get, obviously the slower that's going to go being in a calorie surplus, you're obviously going to go a lot faster. And sometimes in a calorie deficit, depending on how experienced you are, holding steady might be the right expectation.

[01:06:57] It just really depends on where you are. But but I think that once we start to get even for physique athletes, once we start to get into that intermediate and beyond stages, focusing on performance and how that's working is probably a much better indicator than anything that you can get from the scale, the mirror, because.

[01:07:15] The reality of the situation is adding lean muscle is a painfully slow process. So what do we look at to, to give us some insight into what we're doing

is working. And I think that this is probably the number one. And then last thing. And the one that's probably the most controversial is the residual pump from training.

[01:07:33] Now, this to me is similar engaging soreness in that individuals may not have this significantly in certain musculature. Some may have it more in some muscles than others. Obviously you're going to have it more if you do more eccentric focus training. But as long as you realize this, you can monitor that and see, okay am I.

[01:07:55] And the longer that you go into a training cycle, obviously the more that alleviates, but if you know that you have musculature that tends to get sore, particularly in the beginning of training cycles, you can look at that and say, okay am I getting the same type of stimulus that I've gotten in the past?

[01:08:08] And how does this add into those other points that we've been looking at? And I think that as I mentioned, every coach has a different set of these things, but I think that if you use a variety of them, it can give you a better picture of where you are and where you're going. And and can get people comfortable with that process of being patient with where you're moving, because like we've said before, building strength, building a physique after that beginner stage.

[01:08:35] You start to get into that grind and, you hopefully are training because you enjoy parts of the process. You enjoy what it's giving you. But if outcome based goals are part of your process, then you need to find different ways to be able to look at that and objectively tell, okay where am I going and what do I need to do to make adjustments?

[01:08:56] So that's what I use. What do you

[01:08:57] **Dr. Mike T Nelson:** typically look at? Yeah I'm like, I'll put. Even for physique athletes, I've coached because like you said, if you are physically doing more, like more volume, more density, higher percentage of one rep max, so you're stronger at some point, you have to add muscle unless you're in just in a crazy caloric deficit, right?

[01:09:20] Even if you're in a caloric deficit, you can probably still add some muscle, right? It's very hard to measure quarter inch increase in your bicep. Yeah, you can do circumference measurements and all that stuff I think is useful. So for most people, I just, I'm a stickler on performance. So I'm gonna look at volume.

[01:09:37] Over time, can you do more volume than you've ever done before? And that's exercise specific. Can you do more density? So with advanced people, I'll record, okay, you've got a block of time, okay, you're gonna do five sets, Bill Starr, five by five. How long did it take you to complete all five sets? Cool, it took you 25 minutes.

[01:09:54] Great. Next week we're going to leave everything the same, but I want you to get just maybe 5 7 percent better on density. So if you did the same amount of work in 24 minutes... Cool. You're better. And then percentage of one rep max. So can you lift a heavier load? Can, this could be a heavier five rep max, eight rep max, whatever.

[01:10:15] And for neurotic people like myself, I have a notebook with like my top lifts that I'm working on and I literally record volume, density, and intensity. And the thing that I found is most useful is. If I'm hitting more volume, let's say on axle deadlift, because that's what I was doing today. I know at some point my 1RM, which is my main goal.

[01:10:39] Has to go up, right? So like today I did, five reps with 2 55, eh? I got 2 75. My max is two 80 is my one rep Max all time. So my next goal is they hit 2 85. I know because the other day I did 2 65 for. 16, I think 16 reps. So for each load, I have the max amount that I've done. And for one week to the next, it may literally be only doing one or two more reps.

[01:11:08] I don't even care if I do more sets, right? Because my goal is, can I accumulate more high quality volume at that load or just total in time?

[01:11:16] **Dr Allan Bacon:** Even one or two more reps in a week's time period, given a trained individual, that's big.

[01:11:23] **Dr. Mike T Nelson:** Yeah. Yeah. And I know that if I keep pushing that and my body is able to do it, that my one RM will go up.

[01:11:32] Because I think what one of the myths too, is that everyone gets stuck in the, DeLorem three by 10 method that's been around for God, what, seven decades now. And people look at my training and they're like, wait a minute. So you took 60 minutes the other day and just did two lifts and you did 11 sets of each.

[01:11:49] I'm like, Yeah. Cause I got two more reps of them than I did the day, the week before, but progress is progress. Yeah. And they're like, what the hell's wrong with you? I'm like, I remember talking to my buddy, Adam glass, who

helps coach me with the grip stuff. And I asked him once we were laughing about the grip sport because people get into all these little weird things and just variety for the sake of variety, which is fine.

[01:12:11] If you like it, you do you. Yeah so that's

[01:12:14] **Dr Allan Bacon:** the difference with that is in this is the way that I look at that. That's exercising versus training, which is a bit more regimented. Now, that's Oh, totally. That's it. It's semantics at its core. But that's how I define those two things.

[01:12:26] And if the most important thing is that people are getting out and doing something right. So if that's what you need to do to stay entertained, great. But there, there is a difference between regimented training where you're controlling certain variables and then trying to push other variables forward versus throw random shit at you.

[01:12:44] **Dr. Mike T Nelson:** Oh, totally. Yeah. And if people like doing that for writing and novelty is their number one thing, not progress. Cool. Great, man. It's better than doing nothing. Yeah. And I remember asking Adam once I said, Hey, so you're telling me the secret is pick the top lists for grip that have the highest load with the highest transfer and then work to get better at volume density and intensity on them for years at a time.

[01:13:11] And he looks at me and he's yes. And he's because he's cause I can go out to the gym and play with an axle bar for an hour and a half because my autistic ass enjoys this. Yeah.

[01:13:23] **Dr Allan Bacon:** It's funny if you look at, if you look at the guys that are either really good in a weight training sport or are very accomplished in a physique sport, there's never anything that's it's always mastering the basics.

[01:13:39] Over extended periods of time without loss of enthusiasm. So I think it's really funny when you talk about, getting in there and being like semi autistic or just you get so neurotic about your focus on this type of thing. But I think that the people that are really successful really do hyper focus on, okay I'm going to get comfortable with this process.

[01:13:58] And then the joy of this is consistently challenging myself. It's you against you. And and. How do you set that up? And one of the ways to do it is intensity, density, volume, you could do it load. Like it's fun. And I think that the people that struggle a bit who get caught, they go through that beginner

stage and then they get caught in the intermediate stage is that they don't realize that, that the joy is in that, in the mastering the basics.

[01:14:27] **Dr. Mike T Nelson:** Oh yeah. Yeah. Being able to do it. And, even for grip stuff, like most people I coach, like they don't do the same thing I do, cause they don't have the same, they don't have the same goals. They're not trying to pick up an inch dumbbell, so they just want grip to transfer to their sport.

[01:14:42] Great. You don't need to do nearly as much, but you look at Olympic weightlifters, right? Shit, how many times a day are they training? I don't even know of any. High level Olympic weightlifter that trains a half hour a day, right? You've got extremes from the Chinese system to the Bulgarian system and everything in between.

[01:14:57] But at some point you, you just have to do more work and yes, you have to keep the quality of work high. But at some point, more is better until it's not

[01:15:11] **Dr Allan Bacon:** until, yeah until it is. And so that's why you look at the four things that at least for me, that's why my clients look at the four things that we talked about, or, if anything that you're going to hyper focus on is look at your soreness and fatigue.

[01:15:25] And see, okay maybe we expect fatigue to accumulate over an entire training block if it's a three or four month training block or whatever it is, maybe we expect fatigue to accumulate and that would be a probably a realistic expectation. How is our performance improving? And if you're at least monitoring those two, you're keeping your eye on the most important things to one, be able to adjust your programming in the middle of a training block, but two, to give yourself some comfort in knowing that I can't.

[01:15:54] Continually get stronger and stronger or increase my density or volume or whatever it is and not have progress in different areas, and again, the biggest issue for the majority of people is. You get spoiled with those beginner gains because you see massive progress every week.

[01:16:17] Oh, I went up 10 pounds in a lift. Can't tell you the last time that I went up 10 pounds in a lift. Yeah. Like may, maybe a massive compound lift, like a deadlift. Yeah. But I can't tell you the last time that I went up 10 pounds in, in anything other than a massive compound lift.

[01:16:31] And even in those advanced trainees know that. Those 5 pound change plates are the heaviest plates in the gym. Oh yeah.

[01:16:44] **Dr. Mike T Nelson:** You're doing less stuff too. If I'm doing an axle, if I can add 15 pounds to my axle a year, I'm incredibly stoked. Saxon bar, if I can add 12 pounds to my Saxon bar a year, great.

[01:16:57] It's, yeah, and over time, like you said, then you have the thing of getting older where you're just at some point, not that I'm that old, but. It's just going to be about trying not to go backwards.

[01:17:11] **Dr Allan Bacon:** There's, there is that you start to see that decline. What in like your forties? I'm in my forties now

[01:17:18] **Dr. Mike T Nelson:** and everyone tells me, but I just turned 49.

[01:17:21] Yeah. And

[01:17:22] **Dr Allan Bacon:** so you're not that much

[01:17:23] **Dr. Mike T Nelson:** older than I'm 40. I'm 40. Yeah. All my lists now, the ones that I train are better than they've ever been.

[01:17:30] **Dr Allan Bacon:** Here's been my experience. When I was in my twenties, I could fall off a roof and I was ready to lift the next day. Now, if I sleep wrong, I'm out for a week.

[01:17:41] But if I manage my volume, if I train intelligently, I still progress rather well. And and I think that we can certainly continue to see progress gains, all those things for many decades. And, to your point that where people say, Oh, you're going to start seeing these massive letoffs, even if you do maintenance throughout all of these decades is going to be far more important than anything else.

[01:18:11] Oh yeah. The quality of life difference that you have in your late sixties, seventies from, a lifetime of Progressive training versus never really getting into it. It's massive.

[01:18:24] **Dr. Mike T Nelson:** And to me, the process doesn't change. It's a variable that I can't necessarily control. Which is the output.

[01:18:31] Like I can control the inputs, my sleep, what I do for training, all that kind of stuff. But if at some point it starts to flatten out just purely due to age. The reality is I'm probably gonna do the same process unless I have a lot of pain or a high cost or goofy HRV or something weird happens. Like I'm literally gonna try to do the same process so it doesn't, I think people get too wrapped up in thinking that they have to completely change everything and if anything else I've actually probably dedicated more time to lifting like I've been trying to Set up my schedule.

[01:19:06] So three days a week, I can lift with just however long I want. And I just go until it goes off a cliff and then I'm done.

[01:19:14] **Dr Allan Bacon:** That's the right way to look at it. And, again if you can maintain this and and go into those, further decades in high quality life, that's

[01:19:22] **Dr. Mike T Nelson:** the right move.

[01:19:24] Yeah. Awesome. Thank you so much for all your time. I really appreciate it. And I know you put a lot of stuff online and tell us where they can find you if it's in person stuff or online stuff, where's the best locations.

[01:19:36] **Dr Allan Bacon:** The best thing that you can do is head over to Maui athletics. com. M A U I or hit me up on Instagram.

[01:19:42] Dr. D R Allen, A L A N bacon. On Instagram, if you have any questions, certainly send me a message. I have, I'm more than happy to help out there.

[01:19:51] **Dr. Mike T Nelson:** And do you train people in person or is it just online?

[01:19:55] **Dr Allan Bacon:** Exclusively online at this point. Okay, cool. Living out in Maui, being in the middle of the Pacific makes it hard to find a whole lot of in person clientele.

[01:20:06] And online tends to work really well for me. And, I've been exclusively online for a few years now. Luckily, I was online prior to the whole COVID situation. It was just a smooth... Time through that. And like we were talking about before the show started, I expected that COVID period to be a big drop off.

[01:20:26] Oh yeah. People seem to be very dedicated. And it was

[01:20:30] **Dr. Mike T Nelson:** wonderful to see. Yeah. Like my highest income year was for better or worse the year of COVID. I think I didn't do anything

[01:20:39] **Dr Allan Bacon:** but work. So people had more time. And so they're like I don't have anything else to do. I may as well start watching what I eat and working

[01:20:45] **Dr. Mike T Nelson:** out at all.

[01:20:46] Yeah. Awesome. Thank you so much. I really appreciate all your time. That was great. Cool. Thanks so much, Mike. I appreciate it. Thank you.

[01:20:55]

[01:20:55] **Dr. Mike T Nelson:** Thank you so much for listening to the podcast today.

[01:20:58] Really appreciate it. Huge thanks to Dr. Allan Bacon for all of his time and really enjoyed the conversation there. Excited to see him in person,

[01:21:09] Next year at the Coaches Summit, which will be great.

[01:21:13] And thank you for listening. I really appreciate everyone who tuned in and made it all the way to the end or even part of it. You can get more information from me and other podcasts at MikeTNelson.com forward slash podcast You can scroll down there'll be a way to get on to the newsletter for even more information Delivered directly to your inbox try to keep them in infotainment as best as possible information primarily research based information, but In a way that you can understand and hopefully get a few chuckles as you read it again.

[01:21:49] Thanks to Dr. Allan Bacon. Check out all of his stuff. We've got all of his links and everything here. Great stuff from him as always. Thank you for listening to the podcast. Really appreciate it. And stay tuned for another episode next week. Thank you so much.

[01:22:07]

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