



WEEKLY MUSCLE BUILDING EXPERT *Interview Series*



Mike Westerdal Interviews Mike T. Nelson

MW: Good afternoon everybody. This is Mike Westerdal from CriticalBench.com. This your weekly muscle building expert interview series. And boy, do I have an expert in store for you guys today. On the interview tonight we've got Mike T Nelson. He's a Certified Strength and Conditioning Specialist, and he's also PhD candidate at the University of Minnesota. He comes to us from his blog and from his website ExtremeHumanPerformance.com. He spent over 16 years in school studying everything that has to do with exercise and physiology. So, this is going to be an exciting phone call tonight.

We've got a lot of ground to cover. We're going to talk about how to set personal records, how do to physique transformations while at the same time staying strong and staying lean. So, we've got a lot of stuff to talk about.

Welcome to the call, Mike. Thanks a lot for taking time out of your busy schedule for us. You've got quite a bit of credentials and things, why don't you just give everybody a little background about yourself, anything I might have left out.

MN: Oh, yeah, no, thank you very much. It's an honor and a privilege to do calls like this. I always enjoy it. Yeah, correct, I did initially a Bachelor of Arts, natural science at Saint Scholastica in Duluth. And then actually, I decided, went on and did a masters in mechanical engineering at Michigan Tech before I ended up going back to school again. Did a short stint in the PhD program bio med, then ended up switching to where I'm at currently, in exercise physiology.

So, my main work is on...we'll probably talk about metabolic flexibility and I also did a study on energy drinks. So, that's kind of interest to...

MW: Umm...I'm drinking one right now.

MN: Oh, no!

Yeah, and I'm working on a book...just a chapter in a book all about protein metabolism. So, I'm working on some case studies for that. So, yeah.

MW: All right, cool. Are you training people right now, too? Or, are you just totally busy with the academics?

MN: I do have some people, from online clients to various consulting. I do have some people that... I used to work at a commercial gym, but for myself, my personality drove me just bonkers. So, I ended up just training people out of my garage now, which is so nice. They just come over and I can do whatever I want and if it works, great. If it doesn't, well, then that's my fault and I better figure it out really fast.

MW: Yeah, and I'm sure you will without some corporate people telling you you're not hitting your quotas and you're doing it wrong.

MN: Oh, yeah.

MW: Sounds like much more fun training people on your own.

MN: It's so much better.

MW: I worked as a trainer at commercial gyms, too.

So, what exactly is movement coaching? That was one of the services that you said you provide your clients with.

MN: Yeah, I mean, I guess everything I do is based off of movements. And not that I'm an expert that helping someone with their golf swing or basketball shot or whatever.

But, most people are just...take golf for example. They're just trying to get better. So, if you watch their golf swing you can say, oh, well, maybe you should try this or maybe you should try that. A buddy of mine, Frankie, says it's just as simple as watching them and trying to notice what doesn't move. If you can find that, then usually you can see a pretty big increase in their performance.

And you know, it's the same thing like with bench press or squat or dead lift. There's obviously technique that's involved. And by watching people, you can get a pretty good idea of different things you should try. So, that's considered...they're just all movement based.

MW: So, performance based, you work mostly with athletes or people that are trying to develop strength?

MN: Most of the people are just the average person trying to make physique transformations. You know, guys looking to increase strength, and drop some fat and, you know, women, it's pretty similar. Although, women are usually more, I guess for lack of a better word, size orientated. Most women are looking more for fat loss than...they're not really as concerned about strength initially.

MW: Right. That makes sense. Does that lead into the metabolic flexibility that you're going to tell us a little bit about?

MN: Yeah. So, that's probably a term no one has really heard about before, and there's some research that's been around for quite a while now. But, at the simplest level, like if we looked at someone who's a diabetic, we know diabetics have a very hard time processing carbohydrates. So, they're very metabolically inflexible to carbohydrates. They have a hard time using them, causes all sorts of other gummed up machinery in their body.

So, if we look at someone who's very healthy, on the other side of the scale, they should be able to use carbohydrates very efficiently. So therefore, it would be very metabolically flexible to carbohydrates.

And the other main fuel source, as we know, is fat. It can be body fat or that can be fats taken in in food. There are some people who have a hard time metabolically processing fats. On the flip side, you want someone who's very metabolically flexible to using fats. So, the timing of it is what's really important.

So, if you're really walking around during your everyday life, you're not training, you really want to be using primarily body fat to fuel those activities. If you do some form of high intensity training, which can be weight training or sprints or athletic

performance, at that point, most of the time, for very high intensity, you want to be using carbohydrates.

And what we found is that there's actually some people who are almost reverse. Their body is still trying to burn more carbohydrates at rest. But, they then have to take in even more carbohydrates under high intensity exercise.

MW: How do you determine? How can you tell what they're using for fuel?

MN: If you do, in a laboratory setting, which obviously not everyone's going to have access to, the simplest thing to look at is what's called the respiratory exchange ratio. It's called RER. And to go into a lab, they stuff this thing in your mouth that measures all the air that you expire and by the machine analyzing that, it will give you a little number for each breath they take. That will tell you at that point, percentage of fat, percentage of carbohydrates.

For people who don't have access to a laboratory, for them it's just most of the people...a lot of times it's just as simple as paying attention to how you feel, how's your mood, how's your performance. So, if I get up and I have breakfast and I have mostly fat and some protein, how do I feel after that? If I had pancakes, do I feel like I'm going to fall asleep and my face it going to end up on the pancakes by the end of the meal? Or, do I feel pretty good?

The other main condition is training. Some people do very well having like a protein/carbohydrate beverage before or during training. Other people, not so well. If you go to the endurance side, which probably isn't very many people on this call, but those people a lot of times have to take in tons of carbohydrates during events, and that may actually cause them gastrointestinal issues. They don't feel very good because of the long duration of exercise.

So, the short answer is there's no perfect indicator. It's a little bit of initially playing around with it and seeing how your body responds to it.

MW: Now, that's similar to people that are carb types or protein types? How some people think everyone has a unique metabolism where they respond differently to different foods. That's why one diet isn't necessarily going to work for everybody. Does that tie into this at all?

MN: Yeah. It's very similar with a catch. It's similar in the fact that you've got people that say, "Hey, I did this low carbohydrate diet and man, I feel awesome. Woo-hoo!" And then, you've got other people that are like, "That's nice. I thought I was going to die. I didn't feel very good at all."

So, are definitely people that are sort of pre-set towards those two different conditions. My thought is that in general, you'd want to be able to have the potential to do both at the correct time. So, say for example you're not training and you want to sort of minimize body fat. You want to teach your body to burn fat at that point.

One of the easy ways to do that is to increase the amount of fat coming in your diet. Under exercise, though, if you're doing high intensity exercise, you still want to be able to tap into stored carbohydrate stores like glycogen and that type of thing to perform the exercise.

So, you really want to be able to switch, depending upon the activity. Does that make sense?

MW: Yeah, it does.

MN: You use the fuel source at the right time.

MW: So, I guess I'm wondering, is the right time pre-workout or could that be before or earlier in the day? Or, what is the different timings? When are the times that you want to eat?

MN: For most people, it in general involves a lower carbohydrate diet during most of the time. And then, if they're doing like weight training or sprints or intervals, at that point pre-training, they can use like a protein/carbohydrate beverage, assuming they don't have any intestinal, gastro issues with it. That can be timed everything from an hour before, half hour before, and maybe sip on that during. And then, if they're really trying to gain mass or size, yeah, definitely having one once their done training is probably good. If they're really trying to preserve lean body mass, but trying to cut body fat, probably just going back to more just protein post-training is probably going to be a little bit better.

MW: Okay, that makes sense.

MN: Again, that's reducing calories a little bit, too. And most people aren't going to compete and do another event until the next day. So, if your calories are pretty close to where they should be, your glycogen or your fuel stores would be pretty close to normal the next day. There's no real need to eat a boat-load of carbohydrates the hour post-training. Especially if your next session isn't for 24 hours.

If you're a football player and you're doing 2-a-days, then there may be some benefit there. But, for the average person going in the gym, probably not really needed.

MW: Do you believe in that 30 minute window where you can get some sugars right after a workout? That's kind of a commercial issue.

MW: Yeah. The whole timing issue is really interesting. There is some literature that shows that post-training for carbohydrates that if you can refuel them faster, that you can probably refuel the glycogen source sooner and that will probably be beneficial if you have another practice later in the day. So, maybe you're an American football player where you've got your skill session and then your strength session. They're both in the same day, separated by two to five hours or whatever. Then, yeah, at that point, a fast carbohydrate like Vitargo or something like that is definitely going to be beneficial.

If you're the average person where you're just doing another session, maybe 24-48 hours later. It's probably not going to make that much of a difference, especially if your calories coming in are enough to cover it. Your body is pretty smart and it will take those calories and convert them to glycogen. So, you'll still be okay.

MW: Okay. So, when you were describing metabolic flexibility, I saw you said, "Teaching the body to burn fat to fuel muscle growth." You can expand on that a little bit?

MN: Yeah. So, let's say you go in, you have a really heavy strength training session. We know that metabolic rates can be elevated for 24, maybe in some 48 hours. The cool part is that in the perfect world, now this doesn't happen perfectly, you'd want your body to pull body fat to sort of fuel that process. Right? So that you could miraculously increase muscle mass and decrease body fat all the time.

That can happen to some degree. It's a little bit trickier to do. So, we know from research that if you look at high intensity sprints, that's what they call the EPOC, post exercise oxygen consumption, that the payback is primarily fat burning. So that once you're done, your body is trying to get back to sort of its baseline level. And it does that primarily by using body fat. So, it isn't that much of a stretch to think that under weight training, which is still a pretty high intensity event, that your body, if you're teaching it to use fat, could use that to increase the size of the muscles. Does that kind of make a little bit more sense?

MW: Yeah, it does. I mean, if it works for one, it would only make sense the same thing could happen during weight training.

MN: Yeah. So, you would want to be taking fat and using that as the calories to increase muscle.

MW: Yeah, that's good to know that there's potential for that.

MN: Yeah. The hard part is, to be perfectly honest, which is kind of a buzz kill, is that it's...the body doesn't always perfectly operate like that. If it did, you would see people

gaining huge amounts of muscle and dropping fat really fast. But, you can sort of kind of edge it and try to push it towards that direction a little bit more.

MW: Yeah, what are some of the variables, do you think, that make it inconsistent?

MN: It seems to be probably getting people to use body fats or just fat initially. Like we said before, the easiest way to do that is to probably increase the amount of fat that you having coming in as a fuel source. Now, if you have people who are primarily using carbohydrates, initially when you get them to sort of switch, they don't feel very good. It's like if you take anyone and say, "Okay, tomorrow you're having no carbohydrates. We're putting you on a strict ketogenic diet and here we go."

Well, some of those people don't feel very good for the first couple of days, even weeks. But then, most of the time your body then adapts to it and you're okay with it. So, slowly getting them to use body fat, that's one method of doing it. It may be beneficial. Exercise, if you can get a higher volume of exercise, that definitely seems to help. It's not really shown that if I exercise one day and I have an increase for 24-48 hours and I go tomorrow, do I get a further increase? Is it that much higher? Probably higher, but we don't know exactly how much. So, exercising, the anecdotal cutoff seems to be about five hours a week may be beneficial.

Beyond that, related a little bit, more advanced, tissue turnover. If you can do more volume and you can do it at a faster speed, that may be more incentive for your body to sort of replace the older, not as well equipped muscle with new, better muscle so that you're turning over that muscle tissue faster. And that should equate to burning a few more calories.

There are some studies showing that if you increase the intake of protein, your body will then oxidize more protein, so it will break down more protein. And I think overall that's probably a good thing so that you're building up more and you're tearing down more at the same time. A little bit like faster remodeling.

MW: Yeah, that sounds interesting. So, kind of doing faster workouts, maybe more super-setting and just getting more volume in so you can lift more total weight, just try to get it done faster. That might be more beneficial than moving the same weight in two or three hour time span.

MN: Yeah, and that's kind of relative to the density, how much work for volume you're doing. Anecdotally it seems related also to the speed of the movement. So, if you're doing like kettlebell clean and jerk or something like that where you're doing a fair amount of reps at a pretty fast speed. That seems to be beneficial to it also. Or, if you're doing moderate load, but you're moving it relatively fast. Because, we know that speed in general can be pretty threatening. If I took a place and I just set it on your big

toe, it's going to be all right. But, I hold it up to about your knee level and I want to drop it on your big toe, big difference. So, by moving an implement faster, we can create a little bit more stress on the tissue also.

MW: Okay. In power lifting, we try to move the weight as fast as possible, it just doesn't always move fast when you have a lot of weight on there.

MN: You're lifting those heavy-assed weight.

MW: You have your speed training, too, though. Those explosive reps could be more beneficial to the physique transformation part?

MN: Yeah, definitely, I think so. Yeah.

MW: Cool. Like you said, trying to get people to eat more fat, that's a tough thing with society and everything you read around, people talking about how bad fat is for you. Even though you and I know you need fats and it's not necessarily as bad for you as everybody makes it seem.

MN: Oh, yeah.

MW: And convince your clients that it's okay to eat fats, and they've been hearing their whole life that it's going to give them high cholesterol and all kinds of other problems.

MN: Oh, yeah. Women seem to be probably more because the media that they read and that kind of stuff and are really convinced. And some guys who, like you said, fat's just evil and...

MW: Yeah, it's horrible. I mean, we have a friend who's not listening to this call, I hope at least, but they have a baby and they're not feeding it any fat. They're putting it on like a fat-free diet.

MN: Oh, my God.

MW: It's horrible. And the kid is so light compared to how big he should be at this time. You know, those stereotypes, people just thinking fat is bad for you.

MN: Especially for growth and development.

MW: Yeah.

MN: Especially like fish oils have been show, DHA for even the simple nervous system and brain development, especially when kids are growing, is hugely important. But, anyway...

MW: Kind of getting off topic. But, is there anything else you wanted to say about metabolic flexibility, or did you want to talk about the energy drink study you did?

MN: Sure. Yeah, the last thing on metabolic flexibility is that it all boils down to that I think in general people have their idea of dieting sort of backwards. So, they all think, okay, let's say a new client comes in, is overweight and you tell them, all right, we can help you with that, but you're going to eat chicken and broccoli and you're going to eat that for the rest of your life. They're going to running and screaming out the door and you'll probably never see them again.

So, in general, the fitness culture is that you have to be sort of suffer more than the next guy and I'm going to eat chicken and broccoli 99% of my meals. Yeah, some of that stuff can work, but again, it can work at what cost? So, what I have people do is that the end goal, once you're at a maintenance stage, of whatever you want your body composition to be at, your whole goal at that point is to see how many sort of "bad foods" and stuff you can eat and actually get away with it. Can you be 80% compliant, 70% compliant, 60% compliant? To me, that's much more of a healthier outlook.

If you go out to dinner one night or two nights or whatever and it doesn't affect you, your body processes everything just fine. That's cool. I think that's the end goal instead of saying, oh my God, I didn't have my chicken and broccoli today and I ate a muffin and oh, it's horrible. You know?

MW: Yeah. If you're on too strict of a diet always, sometimes you'll see that lead to people just totally binging, pigging out.

MN: Oh, yeah.

MW: I don't know if you know any bodybuilders that have done a show and they've been so strict for 12 weeks that they go and put on like 15-20 pounds right after the competition, just because they eat everything.

MN: Oh, yeah.

MW; I mean, it's human nature if you're depriving yourself, eventually you're just going to crack. So, why not try to have some of those cheat meals? I guess you have to be more strict then you're trying to get to your goal, but once you hit it, like you said, and you want to maintain, that's when you kind of want to see what you can eat and what you can't eat. There's foods that for body composition and health, I think that's two different things sometimes. There's foods that you might gain a little bit of body fat from them, but they're still good for you. So, that's a balance, too.

MN: Oh, yeah. I definitely agree with that. Yeah, yeah. I'll leave it at that.

MW: Well, speaking of healthy, all right, I'm done with my energy drink.

MN: Oh, which one was it?

MW: Now, let me know what's going to happen to me. I was a sugar-free Red Bull and I know the stimulants aren't good. I know the artificial sweetener is not good. So, give me the rundown. What are your findings?

MN: Yeah. I was doing a study that was related to metabolic flexibility, so we had to use an intervention where we didn't have calories for the one group, another group we were primarily basing it off of a carbohydrate beverage. There's tons of stuff in literature on Gatorade and carbohydrate beverages. I'm like, eh, that's not very interesting. I'm like, well, what happens if we use an energy drink? That would be way more interesting.

And then also, in terms of getting it published, using an energy drink makes it a little bit more new and novel, unless the results kind of all turn out negative. Then you go, well, okay, it's an energy drink, that's kind of new and sexy. Maybe we'll still publish them anyway.

So, what we were looking at is exercise performance on a ride to exhaustion. So, get on the bike and just keep exercising until you can't exercise anymore. We also look at heart rate variability, which is the way to measure the nervous system. So, it's a ratio of parasympathetic to sympathetic activation. So, parasympathetic being sort of the rest and digest branch of the nervous system.

MW: The autonomic nervous system?

MN: Yeah, the autonomic nervous system. Sympathetic being the fight or flight. So, we wanted to measure that at rest, after an energy drink. We looked at heart rate. We looked at some stuff called flow-mediated dilation, which is a fancy way of looking at blood flow. So, how does your body and vessels respond to that.

The short answer is that I'm in the process of writing up the studies, so the results for that will be hopefully coming out pretty soon. If we look at some of the other literature, it's pretty split. There is some stuff showing that because of the caffeine and the stimulants that it does benefit exercise. There's also carbohydrates in it. Other stuff shows that it doesn't really benefit all that much, especially if we give someone a carbohydrate and then we're just looking at the fact that maybe the caffeine.

The other components in it in terms of like the taurine doesn't seem to affect performance at all. Caffeine in high enough doses does help performance, especially endurance performance. But, for a typical male, you're looking at a dose of 200 maybe 400, maybe even 600 milligrams. So, like an eight ounce cup of coffee has maybe 120

milligrams. Now, you can go to Starbucks and get like a freakin' grande, whatever, that's got four or five hundred milligrams.

So, it's pretty well split. I mean, everyone always cries and goes, there's not safety data. What's going on with that? There's not a lot of long term studies per se on energy drinks. Even the acute ones, there's one that showed maybe heart rate went up and blood pressure went up. But, if I remember that study correct, they gave, I think it was college students, two cans...I think it was Red Bull. I could be wrong on that. Two cans a day for seven days.

MW: Mixed in with vodka for them, too?

MN: Yeah, there actually have been studies on that, too. One on hand it's like, hey, what happens when we put a stimulate like caffeine in it and then we put something like a depressant, like alcohol. What happens then?

MW: You get drunk and stay awake.

MN: Yeah, that's just about it. A bunch of buddies of mine when I graduated college the first go-around, vodka and Red Bull was like brand new. So, they'd drank me out to bars with them and stuff. I didn't have that many of them, just because I was piss-poor and couldn't afford it, to be perfectly honest. And oh my God! It was like so weird. There are these people that are just drunk out of their minds and just wired at the same time, like running around. it was quite interesting, to say the least.

MW: That's funny.

MN: So, safety data, yeah, hard to say. I mean, I think the biggest problem is that a lot of kids will have an energy drink in place of something else. Oh, I got a hockey game coming up. Well, I'll be fine, I don't need to eat anything. I'll just have a Red Bull or a Monster or whatever. So, not only do you have the fact of the energy drink in the equation, you've now actually have the energy drink sort of displace out what they would have normally, potentially, eaten.

MW: Are they kind of in the category of the supplement where some people use their protein shakes instead of a meal, when really it should just be for convenience or kind of something prior to or during a workout? It shouldn't be something that replaces regular, solid food.

MN: Right, yeah. So, it's one thing to say, okay, I took a protein supplement because I don't have time to eat a chicken breast or whatever. Okay, that's not that far removed. They're both protein, okay. But, now you're saying, well, I had an energy drink, which is just caffeine and sugar in place of a normal meal I was going to eat. Now you're really stretching it.

MW: Yeah, I mean, there's a lot of sugar in those normal ones, like the regular Monsters, those big ones. They have like the gas tank top to them and stuff like that. I don't know, I don't remember, maybe there might be like 40-50 grams of sugar in there, or something.

MN: Yeah, it's pretty high. And most of them are 2-3 servings a can, and no kid drinks like half a can and leaves the rest there. I mean, that isn't going to happen.

MW: So, you've got to get some kind of sugar rush or plus the caffeine. I guess I could definitely see some of the tests showing some kind of increase in at least some of the measurements. But, I don't know if that equals a better workout or not.

MN: Well, yeah, that's a good question. So, the question is, did your performance increase? Or, do you think your performance increased because you feel better?

MW: Right, like you feel flushed, do you feel awake? But then, you're just lifting the same weight, can't run any faster.

MN: Oh, yeah. I think that happens more often than not. Caffeine does have what they call some ergogenic benefit, for sure. But, for example, if you look at the study on people who put the heavy doughnuts on their baseball bats and do a couple of warm-up swings with that. They did a study and said, okay, so you're going to use a weighted doughnut here, then swing a normal bat. The other group no weighted doughnut, just normal bat swing and then have at it.

What they found is that if you added the weight to their bat, the players thought that they were swinging the unweighted bat faster. And when they measured it, nope, it was actually slower.

So, a lot of times, you can't entirely rely on how you feel, per se. Now, a lot of times that is related to performance, but a lot of times it might not be.

MW: I could almost go into some sports psychology where if you feel better and you think you're doing better than you are, you will do better, versus someone who might not be thinking as positively.

MN: Oh, yeah, and there's no question that your beliefs and what you think affects your performance and all that kind of stuff. But, you just need to make sure that you're...simple as it sounds, that you're actually measuring your performance.

MW: Right, I mean, you might as well just do some mediation or visualization instead of using the ring on the bat. You get the same effect. It's not necessarily the ring.

MN: Yeah, and you'd probably do better, right, because now you don't have that sort of altered motor response.

MW: Yeah, that's true.

MN: I'm going on another topic, but motor learning in general can be very, very specific. There's been stories of baseball pitchers that have been screwed up from using a baseball that's just a little bit heavy or just a little bit lighter. And you're much better off going to something that's more dramatically different. It kind of alters those fine motor skills that they guys invested thousands and thousands of reps to get it down to such a fine precision. And you may just screw that all up by deciding to use a baseball that's just a little bit heavier.

MW: So, you're saying do it more extreme when you're changing it up? Don't just barely...

MN: Yeah, so that the body can probably distinguish it as another motor task. So, the pitcher goes out and throws a heavy medicine ball, you know, it may not be that bad because in his brain, in her nervous system, he's associated that that's a completely different motion. That's a medicine ball. That's heavy, it's huge, there's no way I can throw that like a baseball. Now, you give him a baseball that's maybe just a couple of ounces heavier, and tell him, now I want you to do most of your practice throwing this. That's just a bad idea.

MW: What about in sports like power lifting where let's say you're competing in the bench press, but you're using bands or adding chains to the weight. Is that altering it enough? Or, what about West Side's theory? They take different max effort exercises, but they're all different kind of pressing. You think they're changing enough each time, or are some of those too similar that it could be messing you up?

MN: Yeah, that's a really good question. So, what you're looking at is how similar is it and we're looking for what's called positive transfer. So, for example, I just started doing a cycle with band dead lifts, and the band is at the bottom. What I'm interested in, and I haven't quite finished it yet is, I definitely got stronger in that exercise. I started at a really light weight, just using Elite FTS, just the average orange bands at the bottom. And I was able to, over three months, increase my weight in that exercise by well over 100 pounds.

MW: In the band exercise, right?

MN: In the banded exercise, exactly. So, the key question is, so I definitely made progress in that and the next question is, does it transfer to increasing my normal dead lift without bands. I haven't retested my dead lifts yet, so I can't really say. But, I think the guys at West Side and other lifters have done it enough that it definitely does appear to transfer a fair amount. I think as you're a more advanced lifter, it's probably

just enough of a different stimulus to maybe provoke maybe an adaptation. And then, test it again to see if it transfers.

And that's really hard, because I think it comes down to an individual level. So, I pick a period of time where my sumo dead lift was not as good as my conventional. And I added a whole bunch of weights and I sumo dead lift and my conventional dead lift stayed about the same.

MW: Yeah, I've heard that a lot from people. It's just very different muscles being used.

MN: Yeah, but other guys will do it.

MW: I've heard that the other way around though. I've heard if you do conventional dead lift will help your sumo go up, but doing sumo will not help your conventional. That's what some guys from my gym have said.

MN: Yeah, so all those are all just starting points, unfortunately, for you to perform your own little experiment. Take a set period of time, do it, make sure you get stronger in that lift and then that's the end of it. Test it. Did my regular dead lift get better?

MW: Someone else can just do the test for us, because who's got time to do like two months of just one exercise if they're trying to plan for a meet or doing something to see if doing that just one thing is going to help their max. It's like we need guinea pigs or something.

MN: Yeah. That's the hardest part. I think it's a little woo-woo. If you're doing exercises and your movement, your overall movement quality is better, I think the odds of it positively transferring are better. If you do a movement and like dead lift, bench, whatever it is, and your overall movement quality gets worse, I don't think that's probably going to help you move towards your goal as fast.

MW; What do you mean by movement quality?

MN: Here's an example. So, if you have a guy who's going to do a dead lift, and let's say you're watching him and it's a real grinder. It doesn't look very good at all. His back is kind of flexed, he's turning red, tons of tension and it looks like his spine is going to shoot half way across the gym or whatever, but he makes it. He grinds it out. Maybe he hits it a little bit at the end, probably not legal, but he made the lift, so to speak. He drops the weights and you kind of watch him walk away from that and he just doesn't look very good. It doesn't look like any person I want to walk around as. The right leg is kind of dragging a little bit, kind of bent over.

He made the lift, he executed it, maybe it was competition standard or not, debatable. But, he sure as hell destroyed the quality of his movement in the process. He's not moving well. the odds of him doing another dead lift that day are pretty much slim to none. He's pretty much gone beyond where he should have gone.

MW: Now, would that have maybe been like 100% one rep max or something, which you don't want to practice movements like that. You want to save that for the meet and keep your form good during practice?

MN: Yes. I would say that's definitely related to that. Because, I think the problem is, in a perfect world you'd want to do that, but I don't think you would want to degrade your movement so bad that you couldn't perform it again. Does that make sense?

MW: Right.

MN: So, we slide back on the spectrum and go okay, let's do some more lifts at 80%. Okay, that's pretty good, and the movement's still pretty good. You can measure it by gauge, range of motion, grip test, whatever measure I want to use. My movement is still good. Oh, I can probably do that movement again.

So, your body is always going to get better at what you practice. So, if you're practicing a lift and your movement is still good at the end of it, I think that's going to be much more beneficial. Does that help you out a bit?

MW: Yeah, that's a good point. Opposite spectrum of it, let's say you're one of the guys that misses them a lot. You always end your workouts going for one rep max and you just keeping missing those. What does that do to your body?

MN: You're in essence learning to fail. You're literally teaching your body that whatever weight, 400 pounds or 600 pounds, whatever the weight is, if you go in and you keep repeatedly missing... I'm sure you've seen this with bench press all the time. You're literally telling your body that you cannot perform this lift. And you go to try it again, miss again. What did you just tell your brain? See, told you, couldn't lift it.

MW: How does that happen? Like, why is that happening?

MN: It can happen for various reasons. The way to get around it is to be successful in your lifts. I'm sure you've talked to a lot of elite lifters. How often do they ever intentionally miss a lift, or how often do they even miss a lift period?

MW: They almost always cut it off before they miss something. If they miss something it's because something was wrong, like they had an off day, they were tired, they didn't eat good. Something happened and they missed it and it was not supposed to happen. And then they're done. The workout's over anyway. But, nobody purposely keeps

going up and going up and going up. And that's with guys that are competing. If somebody's really hyped up and everyone else sees that was pretty close to where you need to stop, people tell them to stop. And they're just done.

But, if you go to a normal commercial gym, you might see the same guy every Monday night maxing out on different lifts and missing it every single time. He just keeps doing it over and over. But, yeah, it's like a gradual thing. You just want to make little tiny incremental gains over time. Try not to miss too often, for sure.

MN: Oh, yeah.

MW: I guess it's sort of why we don't do it. It just got passed down.

MN: Ego. Ego lifting.

MW: Yeah. I mean, forced reps. What's a forced rep then? Is that something that's going to hurt you?

MN: Yeah, I'd be pretty careful with that. That's my biased opinion.

MW: I've heard about people using it as a bodybuilding technique, but when it comes to strength training, people don't use it very often. When you're done, you're done. If you're half way up the bench and you miss it, they don't make you grind it out. when you're done, you're done. Everyone just takes the weight.

MN: Yeah, exactly. Like you said, the key point is that those guys don't even plan on missing a lift. Does it happen? Yeah. It will happen on occasion. But, like you said, then they're done. They don't go, oh, I can make it this time. Then it's, oh, the third time, yep, yep, yep. No! Just come back another day. Don't keep teaching your brain that you can't lift this.

MW: Some guys do keep doing it over and over, but they usually don't really get past that weight.

MN: Exactly.

MW: That's kind of scary.

MN: They've taught their brain that they can't do it. Literally, that's what it is. They've literally done so many reps that their brain goes, oh, I don't think you can do that.

MW: How do you override it? Take a step back and just work past it?

MN: Yep. If you're constantly seeking your limits, you will find them. If you work within your limits, you will expand them. Nobody goes in and bench presses their max every single day. One, it doesn't happen, and then two, that's teaching your body that

you have limits. Because, you go every day and this is what most people do in the gym, you go, I'm going to go and I'm going to find my limit today. Well, yeah, you'll find it. But, how much progress did you make? These are the same people that reach plateaus, never get by them. They're stuck at the same plateau.

You've got to take a step back. Got to 90%, 80%. An indicator, like I'm sure you've read before and used, is bar speed. Let's say your max today is 300 on a bench and you get up to 275 and you make it and it's kind of a grinder and it's pretty slow. The odds of you making 300 that day, probably not. Right? Because the bar speed was slow. So, you walk up and you smoke 275 like nothing, yeah! Go up in weight.

MW: Yeah, that's why in the meets when you have the three events, everybody usually knows their opener. A lot of times the second one, you're got your second attempt picked and hopefully it's some kind of personal record and you go for that. Nobody knows their third attempt because you need the other people to check out your second attempt. They need to see how fast the bar is moving and see how you look that day. Because, you want to get your second attempt, that's usually the one that sets a PR for yourself and then the third is just like a little extra gravy on top sometimes. But, you don't know what that's going to be. You don't know what kind of day it's going to be.

MN: Oh, yeah, and I'm sure you talk to people all the time that they'll miss their opener. Then, mentally they're hosed.

MW: Yeah, they're screwed.

MN: Just take something like... Your opener, I'm sure you guys have preached on this over and over, and I actually have people practice this. Your opening weight should be something you can do in your sleep with... You could drop someone in by helicopter, slept for two hours and should be able to hit their opener. It doesn't matter what condition, doesn't matter what you ate, it should be easy enough under any condition. You have...no questions asked. You can hit it.

So, you go into the meeting know, okay, I got my opener for sure. The second one exactly what you said. Hopefully it's a PR, hopefully it's pretty good. But, people get greedy a lot of times on their second rep and go, well, my opener was a little bit heavier than I thought. I was a little slow, but on that little piece of paper I made 12 weeks ago it said that I need to hit this number. And they're not even close.

MW: Well, the other thing that can throw off your opener...you know, at our gym we compete with the gear, with power lifting gear, just supportive. It helps you lift more weight, but it also takes practice getting it dialed in. And that's where the opener can

get tricky because it takes a certain amount of weight to manipulate that gear that you're wearing. And that's when a lot of gear lifters get into problems.

MN: On, yeah, and unfortunately whatever you're competing in is what you would need to practice some in, not saying all your lifts have to be geared, obviously. But, you want enough practice that you can do it.

MW: Right, and then you have people cutting weight and putting weight back on. They don't put all the weight back on or they're a lot lighter and now their gear fits different. It just throws people off.

MN: Yep, and in a perfect world you would do that in training, too. You would take, you know, four to eight weeks out and say okay, I'm going to try to replicate the same conditions. I'm going to cut weight and tomorrow is gym day, but I'm going to put all my gear on and try to replicate a gym condition and see where I'm at.

MW: In any sport it seems, why change and do things differently all of a sudden during competition. I did an interview the other day with a bodybuilding competitor and he was talking about diet prior to a bodybuilding competition. He was like, he was telling how people ate clean and good and their stomachs and everything was used to the food they were eating. And then all of a sudden, one week before the show, they started doing all these crazy things, trying to just get an extra bit more cut and then it can backfire on them, because their body's not used to it. I mean, it seems like it happens in a lot of sports like a week or so, everybody starts panicking, getting nervous. And then, they just totally start doing different things they're not used to, trying a supplement they never tried like the day of the meet and stuff like that. It's kind of funny.

MN: Most people I've worked with under those conditions. They call up and they're like, "Hey, I should take caffeine before I lift?" "No, did you try it in training?" "No, but you've even told me there's research showing it will help me increase my strength." "Well, yeah, but you never done it in training so you don't know how you're going to respond to it. But, do it the day before competition?" "Well, I think it's really going to help me." I spend all this time trying to talk him out of crazy-assed stuff they're going to try to do.

MW: That's funny. People just get hyper and excited and nervous. Like, caffeine pills. They're like, "Should I take three caffeine pills?" I'm like, "I've never seen you take more than one. Don't take three now." No, you've never done it before. Don't do it.

MN: It's kind of the model of eustress training versus distress training. Distress training would be practicing a lift under different conditions. If you're going to use caffeine and it's allowed, then use it in training beforehand. Know how you'll react to it and that type of thing.

MW: Things mix differently the day of any sport or event. I mean, you've got some different adrenaline going. You're not in the environment you're used to. The same stuff you usually do is still going to feel different.

MN: Oh, yeah. The first power lifting that I ever did a couple of years ago, they allowed you to bring music. So, I give the guy CD's I was going to listen to. I was like, oh, that's cool. And the second meet I did about two years later, this particular federation didn't have any music. So, I walked out there and it was just a push/pull bench press. I didn't notice it too much. But, for dead lift, I walk out and I look at all these people and all of a sudden they cut the music. I'm like, oh my God, you can hear like a pin drop in here. I was like, ohh, that's just...yeah, because I hadn't trained that way. I hadn't even thought about it. I show up on the day and I'm like, oh wow.

And you wouldn't think something as minor as music makes a difference, but when you spend all your time training one way and you're not prepared for it, it does make a difference.

MW: Yeah, and people get all superstitious and they want certain songs playing and a certain volume and stuff like that. I mean, you got certain guys that they're trying to do a lift, but they want to turn the music up, they want this certain song on. I'm like, what happens at the meet if the stereo's broken or they're playing some song you don't like or something like that? Are you going to not be able to do the lift?

Like, why not train under worse circumstances so that when you're there you're more comfortable? I mean, that's the approach I used to take for football, having played in college. If you're out doing hill sprints and doing things in the heat that's going to be way worse, then you show up to camp, all of a sudden it's not so bad anymore.

MN: Yeah, that's totally true, especially for heat acclimation. I worked with one person who was a marathon runner who I just did a one-off session on her. She was in the Olympics in China. She was like, what do I do to prepare for the heat and the altitude and everything? I'm like, just get there as soon as you can. The reality is, there's some stuff you can do to try to simulate it.

MW: She could go to Colorado. What are those sleep chambers where...

MN: Oh, yeah, the oxygen deprivation usually. Or, they have like high altitude tents and that type of stuff. But yeah, even for heat and stuff, it's get there and train in it as soon as you can. If you're going to compete under these types of conditions, then at least train under it somewhat. That's not saying all your training has to be involved in that, just enough so that you know you can perform under that condition.

MW: Morning and nights, does that make any difference? Like, if you always practice at night, but then the event is like at 8 o'clock in the morning and you're not used to that.

MN: Yeah, more than one power lifter I've talked to is like, "Oh, yeah, it was a two hour drive and it was a morning lift and I got there and my hips were so sore. I couldn't move and AHH!" It's like, well, yes, and you knew that going in, right? And not that it's going to be perfect, but maybe at home, sit in front of your computer for 2 ½ hours and then go to the gym in the morning and see how it goes.

MW: Right.

MN: People are like, oh, that's just crazy. I'm like, but you're just trying to replicate it to see how your body responds to it. And from a mental confidence standpoint, I think it's huge. If you do that and you do it and you perform well, then your whole drive up you're like, yeah, I did this before, no problem. Instead of going, oh my God, I'm scared out of my mind. What's going to happen? My hips are...ahhh.

MW: Yeah. Get there the night before, too, so you're not worried about missing the meet, getting stuck in traffic and the extra stress.

MN: Yeah. The one I did recently in Duluth, I even left at like freakin' 11:30 at night because I was going to see Henry Rollins perform and I wanted to see him. So, my wife and I drove up that night. We go to bed at like 2:30 in the morning. My lift was a little bit later, it started at 10, but I felt better doing that and knowing that I was there at the location instead of the drive up in the morning, worrying about, oh, what happened to traffic and oh, no, I got a flat tire, all the things that probably would never happen, but you keep thinking in your head may happen.

MW: Yeah, exactly. So, this turned into a power lifting interview half way through. Go figure.

MN: I figure it probably kind of always does, doesn't it?

MW: Tell us some of the stuff that's going on with you, where people can get a hold of you, what you're working on.

MN: I'll probably do a live seminar probably in a couple of months or so. Yeah, just working on graduating, hopefully sometime this year, and shameless promotion, check out my blog at ExtremeHumanPerformance.com, too. So, I have all the updates on there. I may have some more webinars coming out in the future, too.

MW: Okay, cool, definitely want to hear about those. The relentless pursuit of your next personal record, I like the tagline.

MN: Yeah, it's kind of funny. I subconsciously stole it from Charles Staley. I was like reading his blog, like this was literally like a couple of weeks ago and I was looking and his tagline is very similar. I'm like, on my God, I think I stole that. I put it in an email, I'm like, I think I stole your tagline. So, I'm changing it. He's like, oh, okay. I was like, I really didn't mean to, I'm sorry.

MW: Well, it's a cool tagline, regardless.

MN: Yeah, thanks.

MW: We'll have to think of a better one, I guess.

MN: Yeah, you can send me any ideas you have.

MW: You going to any events? We first met at a conference in Connecticut a couple of years ago. Are you going to the Olympia or anything?

MN: No, I'd like to, but I'm still trying to work on getting done first. I did go to the ISSN, International Society of Sports Nutrition, conference in June down in Florida. That was a lot of fun. It was a good time. Hopefully I'll get a few more conferences next year for sure, though.

MW: Sounds good. Hopefully I'll see you at one of those. We can meet up.

MN: Yeah, for sure.

MW: All right, well thanks a lot for talking with us. I really appreciate it. We learned a lot on the call.

MN: No problem.

MW: All right, I'll talk to you real soon. Thanks.

MN: All right, thanks guys. Thanks Mike.