



MUSCLE EXPERT PODCAST



EPISODE 55

JACQUES TAYLOR

EP-55 : Jacques Taylor and Adam Miller

Welcome to the Muscle Expert podcast with Ben Pakulski, one of the world's top professional bodybuilders – an expert on human performance and mindset mastery. Ben dives deep to deliver the strategy of top experts to upgrade your body, mind, muscle, strength, performance, biochemistry, and how to become the upgraded, modern man.

Join us on www.benpakulski.com to learn the cutting edge techniques to take control of your body, your brain, and create your greatest life!

BEN

What's up ladies and gentlemen, we're going live with the Muscle Expert Podcast today, and two amazing guests: Mr. Jacques Taylor, Mr. Adam Miller. And I'm going to tell you the reasoning behind today's podcast. So first, Jacques has driven in from West Palm Beach, the 3-hour drive this morning, to come in and we're going to geek out about the nervous system. Adam saw me walk in the door and said, "Oh my God! I've got so many amazing questions for you."

Adam, so you guys know, is one of the best strength gurus in the world. He is the head of MI40 Strength, he is the guy leading the conversation, literally well above what everyone else is doing it. And not to blow his horn but Adam is thinking on such a deeper level than most guys out there. So this podcast is going to be really geeking out of the nervous system.

When I hear him speak, I get so excited that I feel like a little girl in a candy store because it gets the inner nerd in me enthusiastic about the possibilities that exist in academia. So I wanted to bring guys like Adam and Jacques together in a room and talk about stuff that nobody else talks about and just really milk the brains like let's talk about how we can really push the level of knowledge up: Jacques' intellect and Jacques' amazing insights into the nervous system that I didn't even know existed. And Adam is spending 18 hours a day I think, reading textbooks and studies in everything to do with how to get super-strong so he can be the best in the world, and how to build muscle.

So why is it so awesome? Why am I so excited? Because this is the root of what it all started with. So today we're going to talk about the nervous system. This is probably going to be way over the heads of most of you guys. But for the true geeks out there, you're going to love this. And these guys are okay with me calling them geeks because we all kind of identify with being massive nerds when it comes to muscle building, and we love it.

So Jacques welcome. Adam welcome. So I'm going to let these guys kind of lead the conversation. So literally Jacques leaves and Adam goes, "Don't leave today without me talking about this stuff." And I've got so many questions for you and so many amazing questions came up, like, dude you've just got to record this. So Adam. Let's pick one, because there's a hundred of them. And we've already been talking for an hour or so

ADAM

We've already been talking for an hour, right? So I think Jacques is as a strength athlete, power lifting, Olympic lifting, right? We read online and we're reading about hypertrophy and I understand muscle cross sectional area, I got to have bigger muscles to get strong, right? In the textbooks, that's what we're seeing, right? Hypothetically that's what we're seeing. For certifications and what we're teaching in academia, that's what we have to say, right? That's what the textbooks are saying. Now what I must ask is: as a strength athlete, there's this whole big nervous system thing that we're not spending enough time on understanding like, how does that work, and what's going on there? What is this, you know, high threshold muscle fiber recruitment thing? How am I doing that? Am I doing that grinding away of rips? Things like that. Like I want to know something, right?

So what's this nervous system thing when it comes to strength?

JACQUES

I assume we've got packed all those stuff. But first, Ben thanks for having me and that was a great story.

BEN

So for those of you who don't know Jacques, he is the owner and founder of Myotopia. And he's travelling around the world teaching people how the nervous system impacts strength, how it impacts hypertrophy, how to...how to adapt. So if you're interested in understanding how the nervous system works, a simple level to begin and then walk all the way down to the most complex level that exists in the world, this guy is leading the research.

JACQUES

I don't know what to say! Thanks.

BEN

Leading the research in his house, like literally. Body MG, he's with us, he has some cool stuff out so definitely check out the videos.

JACQUES

So you have to think of two things when you think of changes in strength. One are acute changes, meaning things that happen during your workout, right? And then things that happen over a long period of time. So the first thing that happens for anybody doing the workout is a phenomenon called Potentiation. That's when your nervous system and the muscular system actually get more efficient at moving a load, right?

So let's say you have a group of motorunits. And motorunits is a motor neurons that begin in the spinal cord then all the muscle fibers that it innervates. And let's just take a quadriceps for example. So let's say we've got 10 motorunits, and 5 of those motorunits, they immediately start to help you with whatever exercise you're trying to do. Those 5 motorunits, when they stimulate those muscle fibers, if you give them a little bit of a rest, they'll actually get more efficient at moving that load. So instead of using 5 motorunits, you might only need three! That happens acutely. Then as you increase the load, you get that same potentiation effect for all 10 of those motorunits. So finally you get all 10 motorunits doing that effort. Then when they potentiate, now a part might drop out back to eight. So that load actually to you feels lighter, it feels easier. I think of it kind of like that perfect warm-up, you know that warm-up that you come in and go: man, that warm-up allowed me to do my best today, versus that warm up where you're like out of gas. What happened? So that's a potentiation. That's a short-term effect of, wow I feel stronger! Long-term, what happens is, your nervous system actually gets better at distributing the work amongst those motorunits.

So for the rookie, they come in and they start by using something that we call the low-threshold and maybe some of the mid-threshold. And they use those until they're tired and then the big dog starts to jump in. For the seasoned professionals like you, guess what? On the very first try, you get a full spectrum of body participation.

ADAM

Now, with that VOV lifter, you can get that full spectrum. Regardless of load. So we can do that. You notice that we have that ability to lift that load, we have that ability to recruit that. That's a trainable thing.

JACQUES

That is trainable and that is a result of training. Think about it like this: training actually reduces the stress response in your system. Okay, let's first talk about what is stress. Stress is force per unit area. So if I lay down on a bed of nails that should not be very impressive, right? But if I lay down on one nail, I can hurt myself. It's not going to happen.

So now think about this: when your nervous system takes on a little bit initially, it only calls on say 3 motorunits. Okay, that's a drastically low number but this is just for the sake of example. For the trained individual, that nervous system won't call on three units, it might call on seven or eight. So it's actually distributing the load faster even at lower loads. That's cool.

BEN

This might be off-track a little bit, but the thing that I write down here is: what are the energetic considerations of that?

JACQUES

I don't know completely but my hypothesis is that it has something to do with heat dispersion, I should say, and also your ability to share that load more evenly so that you don't have certain fibers just being depleted of energy. I shouldn't even say depleted because you know they don't really get depleted, but of decreasing to a point where you're starting to get information where back along what we call the inter-receptor system.

This inter-receptor system is the system that gives you feedback from your muscles, from your viscera about the well-being of your body. And based on that information, your body might decide you know what, we should dial this down, and this guy is going to hurt himself. Back off. So you don't even get to use your stuff because of how much you loaded it.

So the advantage as you train more is with that dispersion, it's my hypothesis at least, is that, you don't have as much energy being sapped in just one part of that muscle but it is being distributed over more motor units .

BEN

And also for a person who say probably trains more often or is more highly-trained would have a much greater energy cutting requirement to actually fire this, right?

JACQUES

Yes

BEN

So I know this is getting off-track again, but I want to ask this question:

JACQUES

Okay, can I add one more thing?

BEN

Yeah sure.

JACQUES

It's also going to depend on what type of contraction you tend to dwell on. A concentric contraction uses far more energy than does an eccentric contraction. And that isometric contraction is what's in the middle there. In fact, it can be huge in terms of: what's your major goal? Are you trying to borrow up a lot of energy? Or are you in a stage in your training where you still need to get after but you really need to consider your energy because you're not taking in as many calories. So instead of doing that slow concentric light, maybe do a faster concentric, not so long on isometric.

BEN

You apply a lot in inner body composition phase. We spend more time on concentric than the eccentric. If you're trying to burn the calories and get your body.

JACQUES

If you want to burn through calories, yes, spend more time on the concentric, right. If you're trying not to burn through the calories for some reason, then yeah, spend more time on the eccentric.

BEN

So my next question and I think I should want to avoid this one because this is going to take us down the rabbit hole is, we've got a lot of listeners out there who are like, so what's the most effective and efficient method to get me using more high-threshold motor neurons in the shortest amount of time? And I think if anybody has a good comment people should ask you two guys.

JACQUES

Alright, do you want to?

ADAM

No, I want to listen to you. I have questions.

JACQUES

You know one of the exciting things that I was fortunate enough to get my hands on when I was inspired by a colleague of mine, this guy Troy Macmillan, I got my hands on a wireless surface EMG. And what this allows me to actually do is say you know, I've got this hypothesis about motor Unit recruitment in this individual. Let's check it out.

So what I've been doing to try to maximize right from the start the amount of motorunits recruited is to, let's say for a leg press: if you take that leg press down to the lowest tolerable position for that individual, and set up either enough load so I know that they can't quite move it, like literally they won't be able to move it. They'll try as hard as they can but they can't move it or put some sort of braking mechanism on it so that they can't move it.

ADAM

So an isometric. You're talking about an isometric contraction. Pushing into this as hard as they can.

JACQUES

Exactly. So what we'll do is, I'll have them push, I say, "Start to shove, push that as hard as you can. Hold it there. See if you can get to hold that for 6-10 seconds with this probe up." Then I can look at the energy signature from those muscles and we can actually see which motorunits types are being recruited.

We can see, are they more of these low-switch guys, or are they able to actually tap into the fast-switch guys? And if they haven't gotten there yet, have them do it again. Like shove again. And just that intensity of that one position because remember what happens as you move that sled away from that position, what happens? It gets easier. So why not just stick it right there where it is most challenging. Then I can even have something where I dial it back a little bit.

So now let's say we're going to put on a little bit but we know it's very challenging for them but they can move it. I'll have them literally shove like a dimmer switch. Just slowly ramping up their force until they feel this led move just an inch. And I say, "Hold it there. Hold it right there." And guess what? I'll see them fail. And when they fail, then it moves back that inch then to a stop. Then I can say, "Now keep shoving." And then again I can look to see on the EMG, I can go back and look at it and maybe say, "Look at that!" We were able to recruit this full spectrum of motorunits now after we did that kind of contraction.

ADAM

Jacques let me ask you, on the EMG, when they're shoving in there and then it drops down back that inch, they didn't have that ability to hold it anymore, right? Did you see the motorrecruits just drop off?

JACQUES

No

ADAM

You don't. It's a fatigue. You don't see it drop off.

JACQUES

That's the interesting thing. That is the coolest thing about again getting in with these EMGs is that, as you fatigue, the amplitude doesn't necessarily drop off. And as a matter of fact, the frequencies go crazy as you starting to recruit more of these high threshold motorunits. What we start to see happening though is, if we do something called the mean frequency, now that there's the added frequency, we'll see that to start to drop off, right?

Because I just had to recruit some of those high threshold motor units, they have the lower frequencies. I hope I didn't say that a while earlier. But they fire at lower frequencies than the guys who had fired earlier on. You'll see this drop like this. You'll see a drop in terms of the mean frequency. But in terms of the amplitude, you're going to see these massive spikes as for equal of fatigue.

ADAM

Really?

JACQUES

Yes, we'll see that.

BEN

Indicative of what?

JACQUES

Indicative of these bigger motor units getting pulled on.

ADAM

Even during fatigue they are pulled on?

JACQUES

Yeah

BEN

Especially during fatigue, right?

JACQUES

Especially during fatigue. And that's when we'll look at some glass and we'll see this massive deep in the mean frequency. And that changes again with training. That changes with training.

BEN

So just to clarify, the decrease in the mean frequency is indicative of your body using less and less overall muscle fibers or more high threshold?

JACQUES

No, no, and this is the interesting thing. Anything that is recruited, it keeps recruiting it. And then what happens is, as you start to fatigue, you start to increase the number of these high-threshold motorunits that you're pulling in.

ADAM

The frequency, you're increasing the frequency?

JACQUES

No, the high-threshold motorunits have lower frequencies they are firing, right? So that means that the average frequencies can start to come down as they are added. And that is an indication of fatigue. So the question becomes: what is failure? Well, failure is not one point. It's a process. And this is something that I learned from reading this guy named Dr. Beluga of the Delta Systems. He said that fatigue or a failure is not just an event. It's a process that is the end result of fatigue. So do we see as that's happening? It's what say athletes do. We're seeing all the signs of fatigue, you don't really need to do another one of these things. Because if you feel that fatigue, what's the best thing that could happen? It's that you'll not get hurt by the next round.

BEN

So ultimately we need to walk around with cordless EMGs. That's leading into the next question. What are the physiological observable effects? Or how do I know Jacques? Like, nobody is walking around with these, right? So how do I know? Like, at what point do I know that fatigue has set in and I need to pull back compared to like I need to man-up and you know, pull me through.

JACQUES

That's a great question, and I don't want to answer this as if this is definitive. It's just my idea of how you can do that based on what I've been seeing using the surface EMG. And that is using thing like, I've done like concentric-eccentric kind of repetition and I think I'm done. What I can do is get into a position, hold that position isometrically, like, if it's on a leg press again I will suggest that be done toward the bottom. See if you can just hold it there. If you feel like you can do more, then just hold it there. See if you can hold it there for 30 seconds. If you can hold it there for 30 seconds I'm pretty sure somewhere after that, it's going to just hit that stopper then you know you're done.

BEN

With the objective being a neurological adaptation. So all of our listeners are, and I preach this stuff daily: break your paradigm of four sets a beat, four sets of ten, because it's bullshit! And we can talk about that too. By me taking one step toward failure and then fatiguing and I know I've reached concentric failure, I can't do another concentric, but I can take it down to this position and it was challenging, pushing to it as hard as I can concentrically or isometrically.

What's my desired or anticipated outcome by doing that? Like, if someone's goal is hypertrophy, is that where they want to train? Or if someone is going for strength, is that where they want to train? Or if it's just like, I'm just trying to force some neurological adaptation, what am I most likely to see with that type of stimuli?

JACQUES

All of the above. I mean, I think that's the most humbling thing, at least for me. My understanding of the current literature is that, we have a range of stimuli. And if I apply the stimulus to myself, it sets off whatever, right? I get a specific result, and I expect that to work for everybody else. Simply they'll work that way.

A great example (I hope this is a good example), I can remember back in the 90s when spinning first hit the scene. I remember this lady asking, "That's cardio, right?" I was like, "Yeah. It's in a studio, it's for exercise." And like, "So my legs can't get bigger, right?" and I was just like, "No, come on! That's cardio."

Now we know that when people get in there in that spinning studio and they're really cranking it out, what can happen to their legs? Oh my goodness! How many rips did they do? More than 12. But there're other people who go in there and their legs don't get bigger. So again...

BEN

Depending on what they've been subjected to

JACQUES

Their genetics, you're right. Part of it might be their macronutrient and micronutrient intake, a lot of these things go into it.

BEN

So where does it fit, Jacques? Like, I love the idea of changing the paradigm in doing this protocol, but everyone keeps trying to fit this into their paradigm. Where does it fit? Like so, if we got 10,000 people or 100,000 people listening, what can I remove to replace it with this protocol, or at least attempting to try and see what it feels like? What if we replace force that's a ten, like now I can just do one set of this, where does it fit?

JACQUES

You know what I think I would do? I think it fits either as your second set, right? You get on in there, you do your set that helps you prepare yourself for the activity.

BEN

Feel it pro-perceptively.

JACQUES

And it's potentiation. That's what that first set is about.

BEN

So talk about that, because people need to know what that means. What does a potentiation set look like?

JACQUES

Potentiation is simply trying to let your nervous system know and your muscular system know: this is what I'm doing now. We've been sitting in the car, when typically you're super-stressed, there are only certain parts of that experience that you need muscular memory. And that's what cortisol might be doing in the brain: is allow you to focus in on what needs to be remembered and what of these needs to just be chopped up the window. So this idea that...

BEN

So you don't just get this huge negative attachment to...that's interesting.

JACQUES

So every aspect of it doesn't paralyze you

BEN

That's an interesting perspective.

ADAM

So I have a meat-head question.

BEN

Yeah man, bring it up. Let's do it.

ADAM

So I like meat-head questions.

JACQUES

Yeah, me too.

ADAM

So Jacques, what I have, I always question myself, when like lifters report back and you're critiquing your form and a power lifter or a strength athlete, you're looking at the off-season and the off-season is about volume and building muscle, right? And so we could go into a whole discussion about what is volume and what are we measuring and weight versus reps and all that crap, right?

Like, what I'm seeing the sides, young athletes going: I got you 80% today for a set of five, five sets of five. And I'm going, "I don't know, because I don't know if that 80% today is your 20% for a number that you set four months ago." And then you see, I got to do five, and then you see 4 and 5 of the third set look like shit! And then you do two more sets. Regardless of technique breakdown, I'm going: I don't know if I'm getting anything done there, but I've got to put on muscle which we can go talk about for strength. We've got to go into that topic too.

But I'm going, "When it comes to the off-season for a strength athlete, we're seeing massive amounts of needless volume and I don't think they realize like for our nervous system, I don't know if we're getting anything done. Are we getting anything done like add reps and grinding reps, besides the poor technique?"

JACQUES

When you say 'getting anything done', is the bottom line maintaining strength or is it improving strength?

ADAM

Improving strength.

JACQUES

The first thing I would say is, measure it. Are they? I mean, that would be the thing. That's the first thing. The other thing that's equally important here, and this really is a topic for another day, but talking about the influence of your mind on the workout and how you are training your mind as you are working out. And if you can't trust your body, if you can't trust the feedback from your body that is telling you you're not doing this very well, and if you're ignoring that, that actually creates a really poor habits for when you are going to compete.

BEN

And a failure of mindset around exercise. Like, you feel like you're dreading it, you're grinding like we just talked about, right?

JACQUES

Yeah. From a tangible physiological stand-point, you've got a stress. Now it becomes a stress. So the benefits of exercise, washed out of the window. In terms of a neuron-muscular adaptation, the stuff that you wanted to challenge can no longer do it. So you're probably using something that you typically wouldn't use in order to do the rep.

So from my perspective you're not getting the advantage there. At the end of the day I would say measure it for sure, so you can say, "See pal, that really wasn't necessary and actually we're seeing a degradation in your skill." Does that make sense?

ADAM

Yes

BEN

And I really don't think that's a topic for another day because the reality is, we have an endless amount of time but the reality is that, people need to acknowledge that your body is not a closed system. Like it's not just your body and your brain is somewhere over there. It's the same thing, it's a whole. And people need to start acknowledging this, I was just as guilty of this, which is why I'm the first guy to blow the whistle on it. It's like your mindset is everything in your success.

The guys who are the best lifters in the world, the guys who are the best bodybuilders in the world, the best athletes in the world, have the best mindset. But maybe there's misconceptions in there, freaks. But the reality is, you need to maintain that state of success, that state of a positive mindset – whatever that happens to look like.

JACQUES

Yes. One of the things that you know, people talk about this idea of brain plasticity. But we can also talk about, I'll call it synaptic hypertrophy. Meaning this: so plasticity means change, right? This neuron can connect to this neuron, you can learn a new skill. But you can also have a skill and you can actually make that synaptic connection bushier (thicker/stronger.)

BEN

Old habits die hard, yeah.

JACQUES

So now let's think about this, the mindful in this part of this. A young man walks into the gym says, "Hey man, I want to put on some muscle." "Why would you want to put on some muscle?" "Confidence, you know. It's about the ladies, it's about feeling good about myself, you know." You want to walk down the sheet and feel proud. "How do you feel about yourself right now?" "I'm pretty weak. You know, I'm not strong." "Okay, let's go work out."

And when you're working out, you put the bar up, they go to grab the bar and they are struggling with the bar. What's their internal talk going? "I suck! I'm so weak. This is pathetic. This is horrible. He probably thinks I'm horrible." So what are you doing right now? They are literally training that part of their brain. The thing that's already there is getting more entrenched in their brain.

BEN

It's now associating with that lift.

JACQUES

It is associating with that lift, and because of producing BDNF, guess what? Those things are getting thicker and more robust. So if that individual wants a chance of actually shaping their brain in a different way, they've got to come up with some different self-talk.

BEN

And here's the funny story: So all through my bodybuilding career when I would train, I had such a high degree of confidence that I would smash anybody that came anywhere near me, that I would do with a smile! [And pardon my language guys, if there's any children then cover your ears!] I would literally, when I'm training with guys say, "Smile motherfucker! Smile, you're getting better." And I would do that with an arrogance. And then you put me in a back workout or an arm workout and I've always got a scale on my face. I'm usually cursing because I'm pissed off at something rather than this arrogant confidence. And that's just the reality. And now you look back and go, "Why then those body parts first of all?" That's a huge part of it. And I was aware of that during my career but I couldn't change it because I had it so ingrained in my nervous system.

ADAM

Lifters do it too. And you always appreciate, like you're reading or trying to disempower and you're trying to read a lot and discover, "You know what, I'm looking at this article in biomechanics and I'm just not made to dead lift. So I'm just always going to be bad at it." And you're going, if you think of it that way, you will.

JACQUES

Here's another idea then, because I'm wondering if I do this about you, and then you are getting ready for a show, you know what I would be willing to do? I wouldn't be worried so much about the resistance profile, because then I know you got that down Ben. I'll be like, "That's beautiful. Look at that thing. Freaking awesome! Look at that thing up. Look at that!" That's what I'll be trying to get you to adopt.

BEN

So just saying that your brain starts making positive hormones, right?

ADAM

You see things like leading into a meeting with confidence. You know, Ed Coan, leading all time in power lifting, if not the best. You're asking how many lifts he ever missed in training and he'll just kind of look at you, because he's thinking and he's like, "I don't think I really ever missed." He goes, "Less than five because I can't remember in training like I'm attempting a squat and I missed it or I missed a bench." And you're going, "There's something to that."

So as you're watching, if you don't have it that day, don't go for it. Take a step back, it will be there next week. It's okay. So interesting thing.

BEN

Doctoring a success.

ADAM

Exactly. The success. So where we were a second ago, sorry, I think it was actually at Omnis University with a German guy (you've got to get this guy – he's just challenging the dogma of everything we know about strength and size), and he's going: these are all just correlations, no causation, what's going on? So two groups, and they did a bicep curl, and everybody goes, "It's a bicep curl, it's not a squat, none of that data applies."

Obviously people have never tried to actually do research yourself and figure things out. You know, and like how complicated it is to set up research. So let's keep it an unskilled movement, let's go with bicep curl. So we took a group, both groups daily they went in. And it wasn't daily, I don't want to get it wrong because I think it was maybe three times a week or whatever it was. But every workout they went in and they worked up to a conservative mass. That's a max whatever, 30 pounds. One group did work up to their mass, done for the day, went home. The other group, hit the max, they hit 30 pounds, they dropped it, I think it was 20% and they did another three sets of three. At the end of the study, I believe it was 12 weeks, God Jeremy don't kill me if I'm quoting a mistake, but the data is what's important.

At the end, both groups' strength gains, the same. I'm going, there're so many questions I have about that! That is very cool.

BEN

For sure.

JACQUES

What I think is a really healthy thing for fitness professionals to acknowledge is that, the science of hypertrophy is not done yet. The science of strength training, of strength gains is not done yet, it is not over. We don't have this kind of thing. What we have are individuals and then everybody else just fits in.

BEN

Yeah. Everyone thinks well that's what I have to do, and if I can't do it with that, then my genetics must be shit! I'm not capable.

ADAM

Right, I can only get 17 doing his program, that's it. That's what I can do

BEN

The reality is just changing your paradigms. Let's find a different way to do this

JACQUES

That to me, that's what is exciting about being a trainer. If you are really invested that way and you're willing to take the data of your client and go, "Here's where you're starting, here's my hypothesis. We're going to do this for a few weeks and if you're moving in the right direction, we should see these changes. And if you're not, we're going to reevaluate your whatever different variables I get to manipulate to see if we can get you on the right direction."

BEN

How many people have you met in your life that think, let alone think at that level? This is the disconnect, and this is why I'm so gratefully you're here. Because nobody put that level of prodding. Every personal trainer, not every, 90% of personal trainers, probably not all those, but 90% of personal trainers follow the four sets of ten protocols with no thought. It's like, if I didn't succeed, the client must have done something wrong. It's their fault.

JACQUES

I'll tell you the other thing that happens too, is that a lot of personal trainers are really good at establishing relationships, and I can't tell you how many people I've met who would say, "We got a finer trainer. I've known him for like five years, he's so nice." So I think part of it is that people are awarded for mediocrity.

BEN

And then every challenge, that if the trainer looks good, well it's working for him, it must be the right way, I'm just doing something wrong. And you put it on yourselves; my diet isn't right, I didn't sleep very well. Bullshit! If you're getting shit done in the gym, your margin for error outside the gym is so much bigger! You can eat differently, you can eat more diversely, you don't have to be attached to I can't eat this, don't add this doughnut or whatever because I'm going to get fat. No, you just got to get it done in the gym. People need to understand. So go back to your question.

ADAM

I got so many. Jacques, what do you think that even with that study, it's only one study. But there's got to be some kind of neuron adaptation that somebody could go in...and we hear about even Olympic lifting, like the Bulgarians working, how the hell can you do a conservative mass three times a week and back-squat? It's been done. Now, I'm not saying everybody should do it. And we have success with that, and you're going: this group here, it's just one study, but they got stronger.

Now, there's something to be said about how we measure strength. We're testing, they got a bit of a tester whatever. But the other group, they practiced the test more because they did three sets of three. Then you went in and you work out two conservative max and I work out two extra. I walk away and you do three more sets of three, and at the end of this test, our strength levels are about the same. You know what? I don't know if we can measure that but we can look at my computer. Right, there are studies looking at that.

JACQUES

Couple of interesting things is, when we talk about the adaptation in the nervous system, there are adaptations at several levels, one being the primary motor cortex. Another is the spinal cord and the other I guess would be the alpha neuron communicating with the muscle tissue.

ADAM

Yeah. Usually they are myotactic response, is that you're talking about?

JACQUES

Not the myotactic response but I would say...

ADAM

I just want the Golgi, you know those two battling.

JACQUES

Not so much that, that's more of a skill coordination, you know, of things. But in terms of your ability to get the most out of the tissue, you have adaptations in the brain, adaptations in the spinal cord, I guess you can say adaptation at the neuron-muscular junctions. Those are places where things can change that make you stronger. Some of those things happen like that, like the gintation we talked about, other things take a little bit longer.

Then the question becomes –at least my hypothesis would be, those things happen for both of those sets of people. The people who did it to their max and then the people who did the extra three sets. What I think people are trying to see is, if I do more volume, there would be more changes in this stuff, in the actual contractile.

ADAM

Yeah, absolutely. I would say yes, in theory.

JACQUES

But the data, we'll be interested to see if there was hypertrophy. Because maybe there was hypertrophy and if there's hypertrophy, then they'll increase in strength. That to me is pretty darn interesting, that's aninteresting finding. It'll be interesting to see if with the hypertrophy, if you could train that hypertrophy to be stronger.

In other words, if you could now take that tissue that was hypertrophied and now just do the first protocol, right, and see if they maintain the size but they got stronger with the tissue.

ADAM

Just because my brain just goes like, how we talk, I'm going: if I'm adding tissue, I can get more tissue pulled. We're pulling on bones and joints, right? But I'm just saying that's the kind of the paradigm that we're trying to –and it's just they're asking these questions now and that's what's very interesting to me, because what I hope to find out in the future, yes if I get a little bigger there's a possibility I'll get a little bit stronger. But I think there might be a better, more efficient way to do it.

JACQUES

Yeah. So something that you said, that was the other thing. The thing that's always hard for any athlete, whether you are a bodybuilding, trying to boost strength, trying to change your body composition, trying reduce fat is; how much is enough? How do you know it's done?

ADAM

Well I'm telling you when I squat down to do my conventional pull and I'm 18 pounds heavier, there's shit in the way! Things are different. You ever seen a strong man that does a dead lift and it's just conventional style deal lift? He looks like a suit because he's so big and muscular, right? There's stuff in the way. Then my question is, like you said: how much is enough? And then how much is like you know what, that's going to change the mechanics of things going on, right?

JACQUES

Even in the set though, before they've achieved that, how do you know? You know what, actually in other words like a study about strength. How would you know that you've done enough, we don't need to do those extra steps? Is there a sensation or is there something we can measure at the end of that set that lets us know this person has done enough to increase their strength?

ADAM

I tell you what, if we here come up with an app, we'll never work another day in our life for that. I mean, how much is...

BEN

But in reality it's impossible to know because there's so many factors: recovery, nutrition, neuron-chemical considerations. They are limitless. It has to be like someone needs to figure out for themselves like: hey, this works for me and unfortunately this cannot work for anybody else.

JACQUES

Here's the thing though, how do you create? I remember this other day I was just like, that's it. The minimum effective dose.

ADAM

The minimum effective dose. What can you recover from?

JACQUES

I might be doing two sets to many. And here's my learning grove, it's: Jacques, what's going to happen if you do two sets too few? What's going to happen pal, are you going to die?

BEN

What if I'm on a timeline? That's everybody thing, right? Human nature. Like, I've got to get it done. I've got to win today.

JACQUES

Most of the clients aren't, they just want to live a good life. For those of us who you might be, if you've got a timeline, okay, different rules apply. But if you're really interested in just pure recreation, you might say: you know what, let me try doing one of these sets, let me measure and see if that's good enough for me.

BEN

So there's a gentleman, Dr. Scott Stevenson, you know of his work, and he's literally doing one set to failure. He's following that protocol and getting tremendous results with a lot of clients. And we have that discussion and people say, "What do you think about that, because this is the opposite of what you do." I say, "It's not the opposite of what I do, I think that's a very valid protocol for one person and potentially other people who have worked their way or are in their way to that and determine this is what's best for me, and I'm really good at all these exercises and making sure I'm getting maximum neurological recruitment from these muscles."

I'd love to hear your opinion on just that in general.

JACQUES

That I think Ben, falls into this thing where if you take that paradigm, you can do one of two things: you can either apply that to all people and ignore the people it doesn't work for, or you can have...

BEN

does it now work for everyone or it doesn't work if you're just doing it wrong?

JACQUES

Let's make it that exact program. We get to take people through that one set, right? If we did all the data, ran all the data, we might find that that works for, I don't know, let's say 60% of people. But what if we found it only works in 30% of the people? And that's not a bad thing, I would just want to figure out how do I give someone a handout that they're going to fill out that helps me to know you're part of the 30%?

ADAM

To answer it right, so where I see somebody fail, I'm trying to figure out what's failing, what's the weak link? And then I'll actually go like, what we'll talk about: okay, if I think it's gluts, and I'm going to replay a video in my head or play a video in my phone and then ask myself: what's the life of that person? Where am I at?

Now where can I go in the gym and attack that thing, right? But what you got me spark my brain is not only attack it like we do here, like that's gluts in the leg position and I'm going to load that thing. And I want to go there too and I think it's the isometric contraction you were talking about, to get that -we're talking it's weak, like it's weak there. I've got to fix that really quick.

JACQUES

Can you imagine it like let's say it's in the leg position, having them push against something that can't move. Ready? Go! Push as hard as you can. Come on! Keep pushing a little for ten seconds. Okay, relax. Good. Now push again. Smash it! And then again, having a load such that they can move it maybe an inch, that's the far as they can go. But hold it there, hold it there until they fail. And then it drops back off that inch.

BEN

I can see it already there, the adaptation could be fast.

ADAM

Now, could I do something like that in that weak position and then go back into the movement like the squatter deadlift to potentiate...?

JACQUES

It's already potentiated.

ADAM

So could I do that isometric contraction, let's say in the glut? Do that and then go into a squat or a deadlift?

JACQUES

Yes you can. It's definitely going to be a little bit of trial and error. And the reason why I say that is because potentiation is an effect that is there until fatigue sets in, right? So you potentiate and you can potentiate multiple times. You can potentiate through the low-threshold motor units, medium and for the high-threshold motor units.

And then as long as you hadn't tipped into fatigue, you still have all those motor units waiting for you to do the next thing. Now we have to have those, you know these little things you get turkey.

BEN

Yeah. Dude, that's your invention, man!

JACQUES

Yeah, and it will hurt for a second...So we're don't have those but that would be the idea. It's just like the perfect warm-up. Sometimes you get it just right, and every now and then you don't because you didn't sleep as well. So what warmed you up the other day actually fatigued you today.

BEN

How close should the exercise be to the one you're trying to replicate? Should it be a single or, a unilateral or bilateral, or should it be, obviously not the same exercise but...? An example, if I'm trying to get better at my deadlifting and my gluts aren't working, can I do the single leg isometric when I want it to be a dual leg? Like obviously there's stability considerations and balance considerations; any insights on what would be the best approach picking a complementary exercise?

JACQUES

I think that you just lay through the things. If you can figure out a way of creating something that anchors the pelvis, while doing hip extension in both legs in the position that you want, that's fine. But a lot of people just won't be able to focus on that. So sometimes you do need to do it one leg at a time. But some people can. I just think that if I'm trying to show someone for the first time, like that, I'm going to do it one leg at a time, because they focus.

And once they demonstrate that they've got it, can we put this together? And they'll be able to say, "No dude. Let me just do this for a second time. I'm just..."

ADAM

So Jacques, I know your brain works at a level 10, but on a level one level, but just right here in like 15 minutes, I think in my brain as a lifter, we just work the chapter on that's the fastest and the most efficient way in making you strong. That's an absolutely short, like I'm thinking, these are things that are not considered. We're talking in a population of like do squat more, more volume, keep going.

JACQUES

Here's my fantasy: is that we have discussions and exchange of ideas like this and we decide we're going to implement some of these things, we start collecting data. And we start reaching out to our colleagues and say, "Hey we have this idea, and this is what we are going to do. You do this, see what happens, collect some data." So you go, you know what, this is interesting. You're starting to see that this indeed is helping this individual. And how do you tell this individual's background?

This person has been lifting for the past decade and they felt like they weren't getting any further and we did this and things shifted. Or this person actually was a weakened warrior. So we're sharing things that are more than just our ideas, where we can say, "Hey look, yeah. We're applying it and it's shifting."

BEN

From my perspective, this is the data that people need. This is the real scientific data like sedentary populations as much as they are great, and from my perspective, have zero applications. Getting those people to adapt to anything that is comical. They don't adapt anything, and so when you're training an advanced population, that's where a real progress happens, right? That's like hey, we're seeing a difference in this person who has been training for ten years and they got this much stronger, there must be something here but science refuse to acknowledge.

JACQUES

And we also have to accept that there're things that might happen on that end that may not happen on the other end.

BEN

Yeah, of course.

JACQUES

There's something that you mentioned earlier Ben, you said, "Get it done in the gym." And one of the things I think that is so hard to do is to take that person who really does want to change their life, they really want to change their body composition, and get them from where they are to being able to exercise at the intensity where they are getting it done in the gym. So when I think of getting it done in the gym, let's say the goal would be to work out at an intensity where you can actually simulate either change in strength or hypertrophy. There are some people that walk in the door, they really aren't ready. They don't have a concept of it.

ADAM

Jacques and I would actually say there is a larger portion of the population there than what most people know. For most people, we're talking about people that do work out a couple of times a week and when you really get them training hard, you're going: hey you're not there yet.

JACQUES

Not only that, but they do not understand the feedback that their bodies giving them. For example, and you guys have had this experience: you're working out with somebody and you're having them do leg extension and they're going on their merry way and all of a sudden they stop. You're like, "Why did you stop?" And they're like, "My legs were tingling." You're like, "They were tingling?" "Yeah, it hurts." I was like, "That registered to you as pain, and you're thinking to yourself, man this isn't going to get me into stimulation!"

Well, you've got to figure out a way of getting them accustomed and giving you some feedback so that they don't just bail on you. I'm not saying we need to push them to screaming pain in their legs, but it would be interesting to give that same person a scenario like this: you say, "Hey, here's what I want you to do: screen out your legs all the way, hold it right there. What does that feel like right now? I don't know, do you feel any part thicker?" "Yes, kind of on the top of my leg." "Okay, awesome. More on the middle of your leg, more on the side of your leg, or," just get them to play the sensory game. "Do you feel anywhere else? Do you feel it on your kneecap?"

You touch their kneecap. "No, don't feel anything right there." "Awesome, cool. On a scale of 1 to 5, 1 is easy, 5 is impossible, where would you say this is," because 3 is right in the middle. They go, "Ah, looks like a 2 right now." Then you go, "Awesome, I want you to let me know as soon as you think it's about a 3.

Now they're monitoring their experience, and you have some input about what's going to happen next. And then they're starting to go, "I'm starting to feel like my leg is burning a little bit." "Okay, what does that tell you?" "Mm, I don't know, that should be a natural response..."

Now when they give you some feedback, you can say, "Have you hit that 3? Great, let it come all the way down," as opposed to someone bailing and you're really not quite sure what just happened in that experience.

Now, if you want to do the whole range of motion and exercise, you can say, "Hey look, remember that 3 that we had last time? We're going to try and do that again, only this time I want you to move your legs back and forth. And you're going to get to the same intensity." Now we're giving them some guidance in terms of the sensations that they may experience, but we won't freak them out, we make them feel empowered. But it allows you to have a little bit of a say as to when they bail. Does that make sense?

BEN

You guys, on that note we're going to take a break and we're going to end the episode there. We'll be back with part two. Thank you Mr. Jacques Taylor of Mytopia, Adam Miller, MI40 Strength guru, also in the Muscle Expert podcast.

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