



Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Lawrence: Lawrence Neal here. Welcome back to [High Intensity Business](#), the podcast where we discuss high intensity strength training and provide you with the tools, tactics, and strategies to help you grow your strength training business.

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This is episode 362 and today’s guest is [Al Coleman](#). Al became interested in strength exercise in high school to improve his performance as a baseball player. His interest became a passion when he went on to play [Division 1 Baseball](#) and was at the mercy of ill-informed strength coaches. Needing to find a better way to keep him injury free than what was being presented to him by the college strength and conditioning staff, he chanced upon the [Super Slow Technical Manual](#) while combing the shelves of a Borders. A few years later, in 1999, Al passed the test of the most stringent certification in the industry; the Super Slow Exercise Specialist Certification. Al then spent the next 10 years under the tutelage of Master Instructor Rob Serraino and honed his craft.

From 2010 to 2019, Al worked for [RenEx/Overload Fitness](#) where he served as Director of Education. During this time, he worked in close concert with [Ken Hutchins](#), [Josh Trentine](#), and [Gus Diamantopoulos](#) in refining the RenEx

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Protocol. In 2019, Al moved back to Washington, DC and began to work with [Nicole Gustavson](#) and her team. In reconnecting with Nicole, Al found both the ideal business and life companion.

Very romantic. Al, welcome back to the podcast. It's great to be with you again.

Al: Thank you for having me, Lawrence.

Lawrence: You are most welcome. So Phoenix Strength, how things are going? Give us an update. It sounds like you've got a really positive start of the year.

Al: Yeah. When you were asking me before, since I've considered my answer a little bit. What I meant to say was that business has been consistent. Nothing has been vastly different as far as volume or anything like that goes. Inside the studio itself we've been having a lot of fun. What I mean by that is a lot of our long-term clients are happier than ever. They are leaving their workouts feeling like they really got something done. The feedback that Nicole and I get from clients about all our instructors at this point is they like all the changes that we've made and the things we're toying around with. It just breathes a lot of new life back into the place. What I mean by that to be a little bit more specific is as we go a little bit further, one of the things that I'm writing about is this obsession I gained over the years with rhythm and pacing in exercise as an attempt to standardize the fundamental component

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

of a workout, the repetition. Which is something that has been done before as the idea behind [Super Slow](#). My genesis was taking that a little bit further as far as standardization, finding ways. Not because I think standardizing a rep is the end all be all. It's just that that is the major expression of the behavioral component of a workout. It's the thing that if we standardized, our other variables are meaningful.

One of the things over the years that I think a lot of people in the high intensity community have struggled with is describing failure to clients and getting clients to accept the idea of muscular failure and being okay with that. You tell them until they are blue in the face, that you want them to fail. They fail and then you say, "Good. That's what I wanted you to do." They should nod their head, yes, but with some hesitation. It is like, "Okay, whatever you say." It doesn't feel like you were supposed to even though you were told you did well. I think what people mean by that is they failed but really they didn't. The exercise ended but they were left feeling like there is a little bit left in the tank that you could have extracted. But it came upon them a little bit suddenly or they stopped or who knows what. But to our eyes they failed. At least we think they do, and we measure that, and say good job and they move on. But because of those variants and that uncertainty, we toy around with these metrics and variables and over time come to a conclusion that they are important but not as important as reaching failure. That's the big goal of the exercise.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

One of the things that I've seen over the years and especially through my study of motor learning and understanding how the body works with regards to its always moving towards automaticity and efficiency. The concept of failure for people becomes automatized and more efficient over time. And what I mean by that is physiologically you are trying to consciously mediate something that your body, tooth, and nail does not. It's going to fight you. We are trying to make a particular muscular structure fail which can't happen by the way.

Lawrence: What you mean is it can't happen because the brain will stop it from happening. Is that what you are saying?

Al: Yeah. I mean, strictly speaking something very bad would happen if muscles know. That actual event doesn't occur. There is a mechanical failure. There are a number of confluence of events that occur that create the cessation of movements. It is not necessarily just muscular nature. Using that as an objective of a workout seems objective. But it is extremely subjective in a number of ways.

Over the years, what I saw with myself, with other instructors, and colleagues who I spoke with throughout the years, the frustration was always we're trying to get a client to comprehend failure. We are always working to refine things, keep their face relaxed, have them to breathe freely, stay calm. All these things so that they don't get in the way of failure. So that they can stay

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

calm and reach this point of failure as this goal we're hanging off in the distance.

What I understand now about the nervous system, the brain, and physiology in general, and attention and behavior is, again, you are trying to put your attention and objectivity on an event. Number one, that actually can't happen. Number two, you don't know when it's going to happen. Its predictability is pretty poor which doesn't give your nervous system very good direction.

Lawrence: Let me just ask you one question.

Al: Sure.

Lawrence: Can't we make failure objective if we use the definitions by the likes of [Dr. James Fisher](#) or his colleagues who came up with a definition which I'm now getting off on top of my head. It's the definition that we all use which is that even though you are using as much effort as you can the exercise ceases to continue. You can't move the resistance anymore. Can't we be objective in that sense?

Al: Absolutely. That's kind of where I'm going with this. I just would like to redefine failure in a lot of ways. But I also don't try to make it an immediate objective. It is a side effect in other words. If I get the person to pay attention

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

to what I'm asking him to do, real failure by definition would happen to a person in spite of what they are trying to do. If I am intending to fail, I'm going to fail. That's not like a real physiological failure in the sense that I'm controlling this process. Whereby if I put my attention on a mechanical action, I'm really just focused on that mechanical action, and failure sneaks up and hits me. That's failure. You know what I mean?

Lawrence: I see. You think if someone focuses on just failure, they will fail sooner.

Al: They will because, again, the way attention to behavior works is if I hang out this imaginary concept of failure as a piece of cheese out in front of me and I'm focused on that, and my physiology becomes accustomed to what that feels like. Again, because it's subjective in nature, my brain is going to get more efficient and gradually back off what it is considering to be failure. And you've watched this with people. I think that to a large degree with what people saw with the phenomena, with signature time under loads, was this new attentional set point that was being hung out there.

The reason I say that is because a lot of the things that have been in manipulation lately have broken a lot of those molds. There are not a lot of things I don't know. I'm just talking about what I'm observing, is that by manipulating a little bit some of the objectives you are working with during a workout, you don't see failure happen as predictably anymore. Which in my opinion would actually be failure. If it becomes too predictable you have to

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

question what is causing that event to become so predictable. This gets into the idea of the nature of what a repetition really is but I'm not going into that for now.

Lawrence: Where you are going with this it sounds like you are connecting this back to why you're having such a great time right now getting clients great experiences, great results. It is linked to this idea that you are getting them to focus on something else. Something about the process rather than the outcome it sounds like. Can you elaborate?

Al: Absolutely. Good. I mean, that's how I would put it. We focus on the process of exercise. That's one of the other issues that I think we've always contended with people is we want their technique to be perfect. We're giving them this task of perfecting your technique, and that increases the intensity. But we also want you to produce 100% effort towards reaching muscular failure. Which one is it? To some degree I can't do both.

Lawrence: That is confusing for a lot of people actually. Yeah, good point.

Al: My whole plate over the years has been trying to iron out that skill component to make that less relevant. Anything you will learn, someone would remark that when they become skilled at something. When it becomes easy they will say, "I'm getting into a rhythm. I'm getting into a flow. I'm gaining momentum." You know, these various phrases we use to

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

describe the state where things start becoming automatic. When that happens we can now allocate our other resources towards the task at hand without having to worry about how we are managing the task.

That's one of the big problems with exercise. The way we ask people to pay attention we are actually asking them to manage the task rather than produce effort. By asking someone to internalize their effort, like focus on your glutes when you are doing a leg press. In the motor learning literature, that's what they would call an internal form of focus. It's pretty much well understood at this point that that's the best way to screw up a skill and cause the event of choking.

Lawrence: What does that mean?

Al: Well, like in a performance event, when you have a singer who chokes on stage or someone goes to give a speech. They choke because their attention becomes on their inward process.

Lawrence: This is controversial, isn't it? Because a lot of our colleagues will focus on mental focus on a specific muscle group.

Al: I'm writing about this as well. But this is one of the problems with the current usage, blending a lot of the mindfulness literature that's coming from the psychotherapy world and the neuroscience world and trying to integrate it

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

into exercise. That's a topic for another day. But basically so I don't get too confusing, there are subsets of motor learning. It is not just one umbrella.

The subset that I'm speaking about specifically at the moment is the attention and behavioral side. There is a book. It is probably 13 or 14 years old at this point. This author is one of the editors of one of the major academic texts in motor learning. I'm looking at the book now. I'm pulling it off my shelf. It's a life changing book for me honestly. Rob Serraino brought to my attention. I haven't been able to find a copy on Amazon for \$300 in a while. It's called [Attention and Motor Skill Learning](#) by [Gabriele Wulf](#).

Lawrence: Okay. I never heard of that.

Al: It is all research about the effects of skill development based on what you ask the individual to pay attention to. If I'm teaching somebody to swing a baseball bat, there's two ways I can do that. There is the task of hitting the ball to wherever I'm trying to send it to. Let's say I ask the hitter to hit it to right center. That would be what we call an external focus. You are asking them to place their attention on the end goal. An internal focus would be, "Alright, I want you to put your hands in the bat here. Put it in these digits. Hold it here. I want you to put your hands here." You set them up and then you ask them, "As you go through your swing I want you to focus on leading with your hips..." You are chopping this process up in a million segments. Now, that's required whenever you teach somebody a skill initially. You have

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

to give them enough information. But to go any further with it is usually a problem.

There is an ecology to learning a skill. It's not just the person learning a skill. The nervous system. As human beings, we are responders to our environmental constraints. The things that are happening around us our nervous system simply respond to it. And we place our attention on things in the environment so that our nervous system can respond accordingly. A good way to describe this is a phenomenon in the motor learning literature that was seen in the early 20th century. It's called [Bernstein's hammer](#). [Nikolai Bernstein](#) is a Russian researcher. He was studying blacksmiths and he wanted to see why some blacksmiths were more accurate than others. You've got a bunch of blacksmiths in, had the skilled ones and the ones who weren't so great. The idea of the repetition was they went into the study saying basically we want to see the difference in repetition between the skilled and the bad. The skilled one basically meant that the blacksmith was hitting the same spot repeatedly over, and over, and over. The other ones weren't. And they use this technology, at that time it is like CGI, but it is called [cyclograph](#) where they put light bulbs all over an object – hammer and the arms, and they use high speed cameras and then overlay them. What they saw with the unskilled blacksmith was to no surprise. They weren't hitting their spot and every single stroke was different. But when they went to the skilled blacksmith, it was the same, except the skilled blacksmith is hitting the same spot every time but not once that their stroke repeats itself. The

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

brain, the body never takes the same pathway to an end goal ever. There is no such thing as a repetition.

Lawrence: Because there are so many external, environmental factors affecting that motion. They are not robots.

Al: Yeah, because the environment nothing stays static. I mean, everything in your environment is moving around and every single one of your sense organs is responding to that to some degree. Your body is always on the go trying to mediate itself based on this end goal you've given.

Now, how do I apply that to exercise? One of the things we purport in the high intensity world is we have this biomechanically precise equipment. We've got these awesome resistance curves. These great constraints will keep you locked in the machine. It is going to make the exercise easier to learn, more directed on the targeted muscle. And all of that is correct. So why would we put somebody in an exercise and then ask them to think about how they are doing it? Shouldn't the machine's arc take care of that? I can't choose which muscles I'm using in an exercise. You can't self-select. Yes, I can put my attention on my chest muscles and my brain can make those muscles fire. But the net effect of that type of increase in activity doesn't have much of an outcome on the stimulation of target muscle any more than an increased load with really. As a matter of fact, it actually is detrimental. Because one of the other thing that this motor learning research has shown,

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

again this goes back to this internal focus thing is, when you place your attention on what you're doing from a [unclear] standpoint, your brain is more likely to co-contract to contract musculature surrounding the joints that aren't really necessary responsible for action at that joint.

Lawrence: Hang on. Let me make sure I understand that. Sorry, I might have missed a bit there because I was trying to re-center the microphone. If you do place mental focus on a muscle group you are more likely to involve surrounding muscle groups? Is that correct?

Al: Absolutely.

Lawrence: Got it. Okay. Which is not the intent there, is it?

Al: Exactly. Yeah.

Lawrence: Got it. Interesting.

Al: I've seen this a lot. Years ago there was this interesting phenomena when [Josh](#) and I were doing a lot of stuff at [RenEx](#). We had people coming by all the time to look at the equipment. [Josh](#) was making me do the demonstrations. I do the leg press every day of the week, sometimes for people.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Lawrence: Up to failure?

Al: Yeah, yeah.

Lawrence: Oh jeez.

Al: It was just ridiculous. It was fun, a lot of fun.

Lawrence: I watched you work out on YouTube. I feel you. It's painful to watch.

Al: Yeah. No, no. There was a period of time there where I was doing that a lot. It was a lot of fun. I'm saying it jokingly because it was awesome. But one of the things I started noticing over time was, I was putting demonstrations on for people. I was trying to make sure that I was moving 10-10. Sometimes I would tire and I wouldn't actually go to failure. I chose a light weight to demonstrate.

Now, I'm sure every trainer out there has done this or knows this. You get a person you put in an exercise, a 200lbs male. You put him in the [MedX Chest Press](#). He struggles with 160lbs. What is going on here? There is no laid base on this man's body size he could be this weak. I found that's not what is happening. What is happening is the slower you ask somebody to move, you are making it more of a constraining and fine motor task. You are turning a gross motor task into a fine basically by slowing down the movement path

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

to a certain point. It doesn't matter how much load is on there. At some point moving that slowly burns. It burns with 100lbs, it burns with 400lbs. It burns, period, when you move slowly.

Because I would get on this equipment and I'd demonstrate the leg press with a minuscule weight. Number one because I'm not trying to go to failure. I'm not in the zone or I'm trying to work out. I'm just demonstrating. I have a minuscule amount of weight on there like 3 repetitions into it I'm like, "Why is this burning so bad?" I'm like, "I'm way stronger than this." That phenomenon happened enough times over the years makes me realize that that's kind of what is happening with people in the studio. They demonstrate a light weight and it burns and at some point they get sick of the burning and they stop and "fail".

Lawrence: We could be low pulling the weight massively there as well, right?

Al: They would get off the exercise and you're like, "Why aren't you breathing heavily?" I don't get it. It simply because, again, I think the intention of moving too slowly is too much of an internal focused task that's actually causing. And again, this also explains a lot of the phenomena I think a lot of high intensity people will also experience with a [Big 5](#) where you do a [Big 5](#) and you get rolled back, run over by a truck, you just feel destroyed for a week. I think that's a result of, number one, going after the wrong definition of failure. We all say that. And number two, making the task too internal and

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

just draining resources that aren't directly responsible for work at the targeted muscle really.

I think a lot of what people experience over the years training once a week and losing muscle mass, although they are getting stronger, plus because they are getting more skilled but moving a heavier load. But the musculature, the exercise were covered a while ago, but the system hadn't. They needed that time before they could demonstrate that same level of strength again. But it wasn't because the musculature involved wasn't ready for another belt of the stimulus I think. This is conjecture. I'm not claiming anything. But it is just observations over the years both in myself and my clients. The smoother and more automatic they have been able to move, the deeper muscular fatigue they get, and the less feeling that they could come back and do it again a lot faster. But I digress a little bit there.

Lawrence: So you are building this right up. I'm really excited. Go on.

Al: I diverge off the path of talking about the different forms of focus. I'm not going to pull it up right now. But in this book I specifically remember they did a study with a biceps curl where they placed EMG sensors on individuals like the forearm, the bicep, the triceps, the chest, and various places throughout the body. With one set of subjects they said, "We want you to focus on your bicep and on bending on your elbow as you curl the bar." They looked at the EMG's read outs. They asked another set of subjects to do the same thing

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

but this time they said, "I just want you to focus on bringing the bar from here to here."

Again, there's problems with that. If you wanted that experiment to be exactly the same, you need to make sure that certain things were constraints so that the person could have messed it up like if you wanted that experiment to be pure. I'm sure it wasn't. But what they saw was interesting that the EMG activity in the biceps in both experiments was relatively similar. A little bit higher in the internal focus but relatively similar with the external one. The external focus, the global EMG activity at the musculature surrounding the bicep was grossly low. Just by placement of attention on the object instead of the body, a lot of this actually has to do somewhat with imagery. What we are consciously attending to during an exercise.

It's tough to explain and it is really just a slight shift of you not paying attention to the body. You are using it as feedback more or less. You are paying attention to what you're doing and then you feel the musculature you are working but it is a side effect, right. You are not going after that. In truth, that's really the only way it could and that's the way it should be. You want to know how your body should be acting against this thing but it has to be based on that thing first.

I think a lot of the way we go from a top down approach in teaching high intensity training saying, "No. All that matters is the musculature. The

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

machines are just there along for the ride.” You go, “Yeah, but the ride was supposedly correct.” Constructed with this perfection in mind so why wouldn’t we just go along for the ride? We should be going along for the ride. Instead of doing something else while these machines are going along for the ride, we should be following the machine. We’ve created it with this assumption that it’s awesome, right? It is one of these things where you don’t have to assume the musculature involved in an exercise if the exercise is set up correctly. That task should be relatively ironed out and skilled and put out of the way so that all the person’s resources can be allocated towards their effort.

Lawrence: Let’s just focus on that for a second because this is getting to how this manifests for you in terms of what you do to get the client to focus on. Just if I understood that correctly, you are making sure that the setup part of the client’s introduction to an exercise is nailed before they even start. So you’re explaining how they get into the machine, their posture, how they should be gripping the handles, all those kinds of things, neutral head position, etc. Is that what you’re referring to here?

Al: Yes. One of the things that’s really changed about the way I teach exercise without going too far into this. There have been some useful things pulled from the functional training world. By and large, most of it is creative. I’ll say that. It’s haphazard and it is one of those things that has no barrier to entry.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Anyone can make up anything at any time. It is kind of the nature of functional training. That part bothers me.

One of the concepts that I think does hold a lot of clout is the idea of really teaching trunk stabilization during everything that you're doing. Because if you understand biomechanics, in any type of human movement everything from a physics perspective works efficiently when the spine is organized correctly. I don't have to self-select what areas of the body I'm using to do the task. If I have this rigid pull driven into the ground, then everything moves around it.

One of the things that I really focused on to a greater degree, even though it always has been part of our literature, and we emphasize it, we talk about it during our first workout with people, we repeat it over and over again during an exercise to people to try to get them, "Put your head back in neutral position." Whatever we say to them, these corrective things. I'm actually a little bit more forceful about it now upfront. What I mean by that is not aggressively forceful. I make it certain they understand that they have two jobs during an exercise. One I call the primary postural task. The second I call a supra-postural task. I get that from motor learning too and I'll explain it as well.

The primary postural task is the same basically during every exercise. It is the position of your spine which could change during certain exercises.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Consider things like trunk extension, trunk flexion, rotation. But for the gross number of exercises, the position of the spine should be relatively fixed as well as the head and neck because it's part of that complex. And so I tell people, "Okay, like a stack of [Jenga](#) blocks, that thing does not move for the rest of the exercise. The moment it does, you're done. That's your primary task. You f that up, you're done." I'm not blunt about it. And they go, "Opp, alright." And they don't mess it up. It is like a game. You sit kindergarten kids down and say, "Alright, let's see who can sit still for 30 seconds." You watch them, they'll do it. You make a game out of it, they'll do it. Clients will do that too. If you say, "Hey, you are going to shortchange yourself if you let your spine move." People think that's overly annual. But the point is I'm getting something set up for them to get it out of the way. Because with repeated practice that becomes intuitive for them to set themselves up that way. And that becomes what in baseball is called set it and forget it. There are certain things I don't want to have to attend to throughout the exercise.

Lawrence: Even if they break that form for a split second so you won't even give them the opportunity to give them corrective feedback. You will just cease the exercise.

Al: Yeah, the first few times. I'm not a complete jerk about it. I'll just harp on about it all time. Because if I put the leg work upfront, I don't have to. Again, this doesn't have to be one of these complicated things where we demean people. We are just very straightforward about, hey, before you even get into

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

the rest of these, before you even concern yourself about what you're getting out of the workout. This is the first thing that I am asking you to do. Do it.

Lawrence: Kind of my observation. It sounds to me that you have, correct if I'm wrong here, you have almost done a [Pareto law](#) on all of the instructions. I don't know we weren't just getting to this. I love learning about specifics that you get into like the [Jenga](#) metaphor. You are almost like an 80/20 on all of the stuff you used to say and do prior and during an exercise because this is what you find to be the most meaningful and get the best results. I'll let you continue.

Al: Yeah. One of the things that I have really gone to great lengths with, again, I feel I explained last time a little bit. Over the past years I fell in love with baseball again through the motor learning thing and studying biomechanics. One of the things that has interested me the most is, with all the biomechanical analysis now, they can predict how much a pitcher is going to be off of this target by how level his eyes are to the horizon, to the ground when his front foot hits the ground. So head and neck position being deviated by a few degrees can grossly affect placement of the ball. This is one of these things where in that world and in most of the athletic world they are really, really emphasizing trunk stabilization, head and neck position, because it's the pole that everything gets tethered to. If you make sure that that is organized and it's not a variable factor anymore.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

That's all I try to get across clients in the beginning. This isn't something we want to continue to harp on. Let's just work on this first. Get this, understand this. At first we are defining failure in the exercise of your inability to do this. They get that within a workout or two and we get that out of the way. I don't want to think about it again. I've included something else that I will get into another time. But the use of performance bite guards. There's a couple of companies now that make them. One is called [New Age Performance](#). One is [AIRWAAV](#) which I think was made by some cross fitters. It comes from the dentistry world for the most part. But I won't get too deep into that.

Lawrence: What is it?

Al: They are bite guards that go along on the molars down here. When you clamp down there is enough leverage block in the back that it aligns your jaw. When you clamp down and you contract your [masseter muscle](#). Now, most of the muscles in your face are antagonistic to your [masseter muscles](#). So we tell people to relax your face. When they actually squeeze their jaw against something that is the problem. If you don't have anything in there and you do that and you are just grinding your teeth. That's a problem because then you have sliding of the jaw and then you have all this global tension in the neck stuff going on. But when you put a wedge in there and you clamp down it actually pulls your chin in and sticks your head straight up like a pole. It fixes your spine.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Lawrence: Does it obstruct breathing in any way?

Al: No. It opens breathing up. What it does is when you contract that... Well, there are a couple of theories here about the mouthpiece that I like better. It [unclear] that when you bite it, it actually keeps your tongue to press the bottom of your mouth. And in doing so it keeps the tongue in there. Your tongue is attached to your diaphragm. A lot of the [Valsalva maneuver](#) pulls the tongue down at the back of the throat and that's why it obstructs breathing. If the tongue stays pinned under this thing your airways stay open. So your breathing is actually opened up and it makes it more difficult. It redirects the [Valsalva maneuver](#) productively. Let me put it that way. Instead of it causing the behavior that we don't want, it kind of channels it to go in the right direction that we want.

Lawrence: And you have all clients wearing this?

Al: The ones that have bought it. I've asked most of them to buy and most of them do. It helps.

Lawrence: What do they cost?

Al: Like \$40-\$50. Something like that. You have to replace them every now and then. The second one I mentioned. The [AIRWAAV](#), the cross fit one, I actually like a lot better. But it has corrected a lot of the breathing problems we have

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

with people, the head and neck position stuff. All you have to say is bite and breathe to your mouth. I barely ever have to mention to somebody how to breathe anymore.

Lawrence: I'm buying one. This is interesting.

Al: No, it takes a little to get used to. One of the things that I have noticed in clients who start wearing them, I have to remind them of. Again, this is one of these things where you think as an instructor would come intuitively, to a person it just doesn't. I had these bite guards and we are watching people and they are like in the middle of the exercise they are slushing it around in their mouth. It's not going to do anything if you don't bite it. That's the whole point.

Lawrence: You don't want to get over complicated.

Al: As long as you bite the thing, it positions everything in the jaw and the tongue in such a way that your breathing opens up without you having to think about it. That's the key. Again, there are subdivisions of motor learning. One of the operating theories now is what's called the constraints led approach to motor learning where skill development is taught by constraining the things that you don't want to happen. Instead of consciously coaching somebody how to do something, you basically ask them to do this thing but you block what you don't want to happen. The [MedX Lumbar Extension](#) is a great

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

example. You don't want hip extension during trunk extension. The restraint system is in place to inhibit that. All you have to say to the person is extend your trunk and the wrong thing doesn't happen because they are constrained.

Lawrence: Just a side. I'm just asking this for my own benefit but I'm sure it is interesting to listeners too. With the lumbar extension, even if you get it perfect in terms of how tight you make those restraints and how much you push the femur into the hip and make sure that that back row doesn't move. There is still some glute and hamstring recruitment. It is impossible to avoid that completely. Am I right or not?

Al: Yeah, and you shouldn't try to turn it off either. That is again an internal focus. That is not something that you should have operation wise. If you have the constraints set up properly and the person is moving the movement arm at a rate that is consistent, the sequencing of muscular action during the exercise would be consistent from one rep to the next. You won't have erratic loading and you won't have disproportionate loading. Because the expression of movement being consistent is evidence that you don't have an erratic load. As long as that is the intention during the exercise and the person is restrained properly, the sequencing of muscular events that we want to occur will. We don't have to choose that.

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Lawrence: I intend to do a whole podcast focused on the lumbar and execution and setup with someone like yourself at some point because it is something I haven't really covered. Sorry, I took you off track. You were getting into using constraints too. Yup, go ahead.

Al: The constraints led approach is basically you are creating these mechanical constraints, these environmental constraints that basically got maze. If I'm going to teach somebody to run and I don't want them laterally moving off track I build walls. It is like a bowling alley. I don't know if you are bowling in Ireland.

Lawrence: Not recently. But yeah, go on.

Al: I haven't been bowling in I don't know how long, Lawrence. There's bowling alleys that have these beginner lanes where they have the bumpers in it. The idea is that the person doing that understands the nature of a lane at some point by hitting the wall enough times. Well, the constraint led approach to motor learning is basically the same. You are creating a movement maze that you want the person to move through by not allowing them to veer off of it. And then over time, as their attention gets better and better staying on the objective outcome that we want, the brain backward changes the process that needs to go through to get the body to go through that maze over time. But that only happens, as I already explained there is no such thing as repetition. You can't make the same thing happen over and over again.

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The only thing you can hope for is something similar will happen. But the only way you can assure that is that your attention doesn't veer off the target in the first place. You know what I mean?

Considering you can't do a repetition, the thing that you are trying to do consistently is based on this other consistent thing. If you put your attention on what you yourself are trying to make happen, you are no longer paying attention to the target and your brain doesn't have the information it needs anymore to sequence the events in the manner we want them to occur.

Lawrence: This goes back to the study you talked about with the blacksmiths. What are they doing that's different to those that are failing? Is it an external focus on hitting that object? Even though the reps are different they are still hitting the same spot. And then, how does that manifest in exercise?

Al: It's tough to tile this stuff.

Lawrence: Super complex. Yeah, I get it.

Al: With regards to the blacksmith, the skilled blacksmith, the difference between the two of them really was that an unskilled blacksmith is probably thinking about how they are trying to hit the target. The skilled blacksmith is just thinking about the target. Their attention misses the target and their brain is like CTRL+Delete. It just goes right back. They are trying to hit the

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target over and over again. They are not trying to figure out the process from A to B. They are focused on letting their brain figure out how to get from A to B. It needs that consistent, repeated reminder of what it's going towards to figure that out. It's not different from any other skill you would learn. Again, the unskilled blacksmith would be someone who is focused on their action in trying to hit the thing. Which of course is a natural course of events. You always start there.

But the idea of automaticity is moving towards a part where that becomes so efficient in your neural patterns that your brain, your body is not having to waste energy operationalizing a task. The resources can actually be put into the task at hand instead of that micro task.

Lawrence: Got it.

Al: With regards to exercise, there's a few things that I have people focused on externally. In a way the more environmental things you can ask somebody to pay attention to simultaneously, the better the body will respond. What I mean by that is your visual sense, your auditory sense, your tactile senses, those types of things, vestibular... If you ask somebody to pay attention like a spot on the wall you are occupying the visual sense, right? A lot of times I'll use, and I'm writing a lot more about this and I have a specific usage of it, I get into another time. And I know people have used it over the years. But I tripped over a different way to use it that I had referenced and the others

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haven't heard anyone else using it this way. But [with a metronome with](#) proper auditory feedback, it gives the person a lot of information.

One of the problems like computer software stuff is that with regards to the time it takes for the signal to get to your brain and come out as physical action, your visual senses are a lot slower than your auditory and your tactile. And so there is more processing that has to occur from the time that you take in that visual thing and process it back so there is kind of lag. That's why I prefer to have people stare at something that's not moving and instead use their attention on the objective at hand. The way I ask people to do this during exercise is I ask them to stare straight ahead, go listen to this [metronome](#). They are trying to time their movement up with this [metronome](#) but what they are paying attention to is like in the case of [MedX Chest Press](#). They'll be exercising. And kind of their peripheral vision or just their understanding, their awareness, they know they are moving this movement arm back and forth. You'd know that is happening. You can see it in your peripheral vision. All I ask them is to pay attention to that going from point A to point B in the timing that I wanted to.

But, all of this is contingent. Again, upon the trunk stabilization and the setup initially. If that stays in place and the person is moving in pace with the machine, nothing is happening out of sequence. The order of events that we want from a muscular standpoint is happening by evidence of the rate that the movement arm is moving.

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Lawrence: Just one thing. We used the [MedX Chest Press](#) as an example. You've given them that posture tutorial. You've put the [metronome](#) going to help them with timing, you've got that audio cue, and then you've got the spot in the wall, the visual cue. Now, let's say they elevate their shoulders or they don't bend their elbows right away on the eccentric. Are you still cueing that? Are you still correcting that as well when it comes up? Because it's going to come up even if the posture is perfect. Is that fair to say?

Al: It is. Well, yes and no. One of the things, and this kind of harkens back to I think maybe a redefinition of failure. The way I define failure now, the way I have my instructors record it, and the way I record it, is the moment it becomes impossible to maintain the pace of movement that they are moving at. I stop the exercise. The reason for that is because if we understand biomechanical sequencing and the kinetic chain and what's happening and what has to happen to create, at least to our eyes, a visually consistent speed of movement. That is telling us that the sequence of events happening in the body has to be consistent. Because the thing moving this object has to be moving consistently for the object to be moving consistently.

That has to be our measure. Because the moment that I can't keep up the speed of this object anymore and it slows down, something different has to be happening in my body. It is now a different exercise at that point. I don't have people grind through a repetition anymore just to finish a repetition. I

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don't know what's failing at that point anymore. Because I don't have the consistency of movement to tell me what's happening with the body.

Lawrence: Okay. When that consistency of movement drops off, do you see a difference in form invariably at that point? And then that's why you call that failure?

Al: That's my point. If somebody is stabilizing their trunk properly and they understand how to move with consistency, they get locked into that. The moment they are unable to maintain that, everything goes all at once. It's not like a gradual break there. The inability to keep the shoulders down in a chest press will interrupt the ability for them to keep their pace consistent. The two things happen simultaneously. A more skilled person won't let them happen prematurely so that it doesn't wind up affecting the pace of movement. And that's the difference between a novice and advanced trainee is the ability to keep their attention on their pace. Again, the motor learning research would tell us that as long as I can keep my attention on that, the body will respond correctly. Because it has to. If that thing is moving consistently, the thing moving it has to be happening with some relative consistency. Because there is no such thing as a repetition in that sense. But there has to be a relatively consistent path to hit the same target over and over. In this case our target is not very hard to hit because the movement arm is doing the work. We are not dealing with those variables.

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In that way, exercise is a relatively easy skill. I think if the skills are taught correctly upfront you would really get that part out of the way fast. Now, you are dealing with people who know how to behave and so now you have a controlled experiment to work with your clients.

One of the flaws that I think in any exercise methodology study. I mean, physiology studies you can do this chemical staining and look at muscle fibers and all that cool stuff going on. And they statistically fit to figure things out to account for this problem. But it is still a little cheap in my opinion. The one thing that I just never will have trust in with exercise methodology studies is the unknown variable of the person. You are asking a group of people to do the same task knowing that each one of those people is not going to be doing the same thing.

Lawrence: It's a gross measure.

Al: And they themselves are not even the same person from one session to the next. If I'm going to have any trust in the outcomes metrically in my exercises, I want to be sure that the behavior of the person doing it is pretty much on key every single time they are doing it. I can't put much trust in what I'm writing down on the chart. And so my entire quest has been to standardize the behavior of the person doing the exercise so that I can garner something meaningful out of the other variables we're working with.

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I think over the years, one of the things that I've seen in the HIT field that I've slightly been disheartened by is just the... I don't want to say disheartened. That's a bad word. You know, a lot of people got into [Super Slow](#) early on in the 1900s and stuff and in [Nautilus](#) before that, there wasn't YouTube. There weren't ways to see how people throughout the country were training. Everyone read the material and everyone was out on their own doing all the stuff. Everyone is assuming we are all reading the same thing and we are all going after the same thing. And then YouTube came around and all of a sudden for the first time I was able to see studios throughout the country who were reportedly doing what we are doing. They themselves, the instructors themselves filming workouts. I was like, "Oh my god, this is terrible." There is such a variant interpretation here. Some people look like they are in a wrestling match with the machine. They are like, "I did it 10-10. I've got a minute and twenty time under load, time to bump the weight off." Throwing caution to the [unclear] with regards to their behavior then rationalizing it saying, "Well, no one can ever stay still doing an exercise." Things like that and I even pushed the stoic thing for a while. But one of the things that I learned through motor learning is talking about that EMG study. Stoicism is a byproduct of your intention during the exercise. It's not something that you should be focusing on and making happen because if you are, then you're not paying attention to your objective anymore.

Lawrence: I remember when I used to try and make that an external focus as well like the stoic face. And I had a client who just burst out laughing. He found it

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hilarious. You are laughing, it's definitely not what I intend. I don't want you to laugh. I want you to focus on the exercise.

Al: That's one of the things the bite guard has helped with. What I was mentioning before is the [masseter muscles](#) are for the most part antagonistic to many of the other muscles in the face. When they have something to contract against, they are putting the other musculature in the face into length or into relaxation because they are clamping down. It takes care of the stoic thing. Because if somebody is going through and they are wincing then they are not biting. As long as they are biting they can't wince. It is like trying to pat your head and rub your chest at the same time. You are doing one of the other. The bite guard has taken care of a lot of that behavior side of things because it also puts the head and neck in a position that is a lot more stable. I just watched people behave better in that way.

My entire point is if I can stick something in someone's mouth and say bite. Now, I look at them and I don't have to tell them to keep their heads still anymore. I have a much better assurance that what I'm seeing from one workout to the next is consistent enough that these numbers on my chart mean something. That kind of circles back to how we started this is what my clients are seeing. This is what they are excited by. I now have such consistent behavior with people that I can say, "Go after this number." And I can rest assure that they are not going to misbehave in doing it. It's now a correct chart on a stick that actually drives their motivation to exert in work.

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They are finding that they are capable of way more than they thought because they are no longer chasing this mirage called failure. They are chasing some objective that I've given them based on a previous workout knowing that I can almost predict it because their behavior is so consistent.

Lawrence: Like a number of repetitions or time under load. You are giving them that objective.

Al: Yup.

Lawrence: That is so fascinating. It is almost that you've come full circle to the objective of exercise.

Al: Yeah, absolutely.

Lawrence: Look at that. I bet there are some people not very happy with you, Al.

Al: No. I don't use time under load anymore because it depends on repetition speed almost completely to some degree. Like the time under load, you will get between a 10-second repetition and a 7-second repetition isn't that different. The time under load you will see between a 7-second repetition and a 5-second one is gigantic. The time under load you will see between a 5-second repetition and a 3-second one gets even greater. There is a problem with time under load and I pointed this out before. I just don't like

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to use it as a measure for that reason alone. I meant that repetitions are just a step function of time anyway. As we are changing the time of repetition, we want to use the simpler step function to track in my opinion.

Again, numerically, it is much easier for people to focus on a simplified step function than it is to ask them to focus on time. That's something we can get into another time.

Lawrence: No, this is so fascinating. It makes a lot of sense to me what you're saying and it is what we are doing much of what you say. There is a lot we know. We are inspired by and thinking about how we can add that into our process. Tracking the reps and telling the client, "Hey, last time you achieved x. This time I want you to focus on achieving this." It is something which a lot of our colleagues don't agree with but we've been doing. And I know a number of other studios are doing it. It's a bit of a mixed feeling in our industry.

Al: That's where I've really diverged from people. It's not that I've diverged. It is just that I saw that maybe we are going about it the wrong way. Like we are telling people, again, we don't like to focus, we don't like to use numbers to hang out there to get people to chase because we are afraid that the behavior was going to induce. That's it.

Lawrence: Yeah, exactly.

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Al: We are afraid that that cue, that instruction is going to cause them to misbehave. My point is if you get them to behave it won't. And instead if you get them to behave, they fix their behavior. That number is just going to drive them. That number is now going to be this conceptual construct in their head that's going to give their nervous system the directive that we're asking it to. We are programming into the nervous system an objective now that it can, from a bottoms up process, figure itself out and reach. I'm able to manipulate things and this is a longer discussion in such a way that I've been able to keep a lot of people's stuff moving in the right direction. That's a lot of stuff I'm writing now. I don't want to say too much of that because I'm kind of experimenting with it.

Lawrence: Yes, fine. What I'd love to do because this has been really eye opening for me and I'm quite excited actually. I'd love to talk about this in a particular example. The chest press we've been talking about quite a bit on this podcast. Maybe we'll just use the chest press. Just to go from start to finish if you don't mind. Earlier you started talking about setup and you said you had the primary and sub goal or something like that. Could you just so listeners can really grasp what you're saying in a specific example like on a chest press. And then they can maybe try and implement this themselves. Can you walk us through that from start to finish?

Al: Yeah. Let me go back and describe what I called the primary postural task and the supra-postural task.

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Lawrence: Rehash it. That's fine.

Al: Give you a slight analogy that they use and I read in one of these motor learning books. It wasn't a study but it was an example. Say, you have a roller skating waitress. She's got a tray or whatever. She is trying to balance and she's on roller skates. The roller skating would be considered the primary postural task. That's the primary thing she is doing. The supra-postural task is the task that you are applying on top of that primary one – the holding of the tray. Now, as any waiter or server knows, you don't look at the tray or the ground or anything else except the horizon when you're walking with the tray.

Lawrence: It is like driving a car. You should look down the road ahead.

Al: Yeah. You don't look at the wheel or the gas pedal. You are broadly paying attention to the ecology of the situation and letting your nervous system respond in time. Once you have an understanding of the various operations, right? That's basically what we are doing in an exercise when we set somebody's body up where we want it. We're basically teaching them all the moving parts and what to move and what not to move. And then we are driving the car which is the machine at that point.

In the case with the roller skating waitress what they show is by focusing on the correct objective of balancing the supra-postural task – the tray, the

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postural task automatically gets better. It has to or you can't do the supra-postural one. It is a bottoms up process in the sense that by putting my attention on this finer thing, the primary thing gets better. As long as we teach somebody in an exercise where to put their head and neck, and spine, and all of this, and we say, "Okay, now, keep this here." And now I want you to move this from A to B. Because they have set themselves up correctly, their attention being on this other external objective, the primary postural one will stay where it is supposed to. Again, our external objective is on keeping them the speed of this object consistent so to speak. It depends, I guess, on what you're asking the person to do with an exercise. But in my case, I like people to focus on the consistency of the pace of the movement arm.

Lawrence: Just a side note, I was a terrible waiter. I once spilled an entire bottle of red wine all over this lady. It was a very posh restaurant like a silver service restaurant I worked over 120 years ago, like 12 or 13 years ago. I pretty much ruined her day. She still tipped me strangely because I think I dealt with it well. But I was the worst waiter the world has ever seen, Al. Thank God I didn't stay in that. Well, actually I think I was sacked. Yeah, I was sacked. There you go.

Al: One of the other interesting things is, so we talked about direct muscular loading. That's the objective we consider to be one of our primary objectives of an exercise is to do an exercise in such a way that we're loading a

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particular set of structures, and we don't want to unnecessarily load structures that aren't responsible for those joint actions. It is the idea behind an exercise or else why would you do it.

Again, we've always approached it by saying that it's something we need to mediate. In any type of athletic skill, by definition the movement becomes more efficient and safer when the body moves smoother and learns to use the larger structures to accomplish the biomechanical task. Injury happens when that movement gets unsmooth and now the smaller structures are forced to be loaded in a way and do things that they are not supposed to do. The smoother a task becomes, the more direct the muscular loading is becoming. It has to or else it gangs up the speed of the joint. This will tick some people off. But to some degree the faster you move, the more direct the muscular loading is. It has to be because for a joint to move faster the muscles surrounding the primary one responsible for the movement of the joint has to be more relaxed for the [unclear]

Obviously, you are dealing with other physics involved there which is why you wouldn't want to go there. It is throwing another variable into the equation. I am saying in theory. The quicker the muscular contraction is, the more direct it is. Again, it has to. Or else joint movement would be inhibited. And so putting your attention on the external task kind of drives the body in that way. Whereas, when you are internally focused on how you're exerting you kind of dunking up the movement of the joint because you are basically

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micro-managing the exercise. It is called the principle of self-organization in motor learning. Basically by putting your attention on what you're doing, you're letting the body figure out the path that needs to take to reach the end objective.

Again, I think what a lot of people get confused with is... With an exercise if we designed it correctly and we've set the body up correctly, and we understand the arc that we want, either the implement and move through, either a machine or free weight or whatever, and we're sure we are moving in that arc, we don't have to break the exercise down any more than that thing. You don't have to think about anything else because that arc is taking care of the musculature involved. I'm not saying aggressively try to attach the machine or wiggle it around just to finish a repetition. There is a context. I am talking about trying to keep the swing of the movement at a consistent pace until it is unable to do so. The moment that you can't do that, you are not doing something different if you continue past that. It is not the same exercise anymore.

One of the other things I know I've read here and there... By the way, for your listeners it's a great book. It is on Kindle. This guy does a great job in my opinion of compiling a lot of the research on hypertrophy. I think the book is just called [Hypertrophy](#) by [Chris Beardsley](#). It's a medium page.

Lawrence: Yeah, he is popular.

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Al: He does some interesting infographics and stuff like that with regards to the process of things. We know that most of the motor units aren't going to be recruited during an exercise or recruited about 80% of the ways or what is considered to be mechanical failure in literature. I'm just not sure of all the grinding that you see in traditional HIT to try to dig out that last final repetition. It is not sure what it's doing besides just making your body go to a wrestling match that it has to recover from. It is clear to me that once you get into an exercise there is a consistency of movement up to a certain point when you start to see strain and struggle. A skilled person will be able to hold that off as long as possible while maintaining speed of the object. Again, that is what defines the skilled exerciser from a non-skilled one at this point. But even for that person, they will reach a point where their behavior is going to have to change to continue to affect the movement of the object. At that point it doesn't make sense to me to do the exercise anymore. You've not changed the exercise.

Again, given the fact that there is no such thing as a repetition, we're using this visual marker of the machine moving at a consistent phase to grossly track what we're doing. And if at that level it is now grossly different than it was before we can rest assure that we're not even doing close to the same thing we were doing before. Considering what we were doing before wasn't even the same from one rep to the next.

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That's one of the major things I've changed is not having people, I have them move along with the pace I'm moving. If they have to grind through to finish a repetition, there is an obvious change in the way that's happening. And so I don't see much of a point in doing that. It's greatly assisted my clients' recovery and their ability to keep progression going. Or at least make the record keeping consistent enough that it lets me get an accurate picture of what's happening.

Lawrence: I'm just thinking maybe for beginner clients, maybe even some novice clients, or maybe this is something we're doing wrong but I'm just curious. What if that grinding at the end is a result of discomfort versus actually being at muscular failure? Therefore, if you cease the exercise then, you might be shortchanging. That's my only concern.

Al: Here's something to ponder for people. Again, I have mentioned earlier, there are a lot of things that are causing mechanical failure. But one of those, again, as I mentioned with the whole signature time under load thing is simply a person's attention. As I've already mentioned, the recruitment of a biomechanical sequence of events is contingent upon what the person is attending to. A behavioral change in an exercise is evidence that their attention has shifted to something different.

Lawrence: They are focused on the discomfort. Yeah, go ahead.

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Al: Right. I tell people this is going to be uncomfortable. It is going to be there but it is in the periphery. It is a side effect of the exercise. You don't have to pay attention to it.

Lawrence: Take us though, right. Even someone like myself, and obviously I'm nowhere near the level of yourself, Al. I wouldn't even put myself in the same category. In fact, today, right before we spoke I had a workout. I'm quite impressed with my ability to keep up with this conversation so far. But I did a wall sit, and a wall sit listeners will know is a very uncomfortable exercise. I hit the deck probably easily 30-40 seconds before actual muscle failure. Even myself, someone who is pretty experienced, I've been at this for 10 years, I still struggle. This stuff can be a real thing.

Al: That's one of the problems with the concept of failure. Again, as I've already explained, based on my understanding a lot of this motor learning literature on attention and behavioral control and things like that. Again, the way the body responds in a biomechanical sequencing of events is continued upon what you are paying attention to. As that changes, so is what's going to happen that comes after that. If you are doing a wall sit, it's incredibly uncomfortable, how do you standardize where you are losing your attention.

Lawrence: Of course, you'll focus on the clock or a time or something like that. That's where I should be focused on. Is that what you're saying?

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Al: Yeah.

Lawrence: Sorry, I interjected there.

Al: Well, you're going in the right direction. We need those objective measures to give the person a context from what they are attending to and how long they have to attend to it. Again, if you throw failure out there in the wind and say, "I just want you to go to failure." They can only attend to that for so long before they can't pull off all the other things that they are trying to ignore. That's why the discomfort takes over and makes most people stop because they can't pay attention any longer. What comes rushing in is all the discomfort they are in. But if you say to somebody, "I want you to do this number of repetitions with these other constraints in mind like your pace and all of this. These are things I want you to attend to and this is how long I want you to attend to it. Most people will go, "Okay." And they'll do it. If you say, "Go to failure." They'll be like, "Alright. How long do I have to do that?"

Lawrence: So amorphous for people as well. It is so interesting.

Al: It is all based on our conceptual construction. Again, our brains are one of our survival tools. We create conceptual constructs as a survival tool. I mean, that's how human beings survived in the world. And so much of how we operate is contingent upon what it is we're paying attention to. It's a response to ecology. We are not just isolated organisms who are trying to

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control our environment around us. It is the other way around. As long as we are attending to the things correctly surrounding us, our body will respond correctly. That's I think maybe the culmination of a lot of this motor learning stuff.

Lawrence: That's really profound. Al, I know I already asked you this and we went on another tangent. But it was a really good one, like the best tangent yet for sure. But we got another sort of 29 minutes here and what I would love to do is walk through that chest press. So [MedX Chest Press](#), you've got a new client. I love to hear how you do it and whilst describing how you integrate what we've been talking about today in that process. How do you introduce someone to the machine? Set them up. Talk about the primary focus, etc, and actually do the exercise. Could you just walk us through that? Whatever level of resolution you want and I'll just dive in as we go.

Al: Sure. One of the things, and I will talk about this a little bit, the first thing I will always address is the way I want them to hold their trunk in an exercise. That's kind of something I will teach outside of any exercise. I'll teach somebody how to stand first. This sounds a little crazy, but there is a proper way to stand. You don't want to stand with your legs in the ground, your hips externally rotated which will tilt your pelvis in the correct position. I got this from that guy who wrote [Becoming a Supple Leopard](#) by [Kelly Starrett](#). He's got a great couple chapters on trunk organization.

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Lawrence: You have become very open minded, Al. I really like it.

Al: I read everything.

Lawrence: Good for you. Doesn't mean you have to accept it all, does it. I'm sure there's plenty of that and you just read with.

Al: Yeah. I just like to read. I try not to sit there and talk to myself while I'm reading. I just like to read stuff, and stuff that makes sense to me I integrate, stuff that doesn't, I don't. But one of the things I like that he did... Again, this is a talk for another time. I've been a zen meditator for about 20 years. And zen is seemingly important. As a matter of fact, in the tradition that I have sat in, they don't teach you how to meditate. They show you the posture to sit in and they say, "Hold still until the bell rings." That's all the instructions they gave.

Posture is very important if I have to say. Because the idea is there is not a difference between the physical and the mental, right. Now, your mental process is basically a result of what you're doing with yourself physically. To set somebody up in an exercise, the posture has a profound effect on their ability to pay attention. It doesn't take a genius to realize that if you're in a slump and you are like this, you are probably out and all over the place.

Al Coleman - How to Get the Most Out of Yours and Your Clients Workouts

Lawrence: When you have good posture and you stand up with your shoulders back and chest up, doesn't it increase serotonin and all these other hormones?

Al: Absolutely. All that stuff is true. It is a nice thing to say, right.

Lawrence: I'm thinking of [Jordan Peterson](#) and the lobsters. I don't know if you've heard of that.

Al: Yeah. And there is a book, I couldn't get to the rest of the book because it's too cheesy. But there is a book called [Presence](#) by [Amy Cuddy](#). She is a behavioral psychologist at Harvard. She did a [TED Talk](#) years ago. It's great. You can find it. You don't have to buy the book. Just watch her [TED Talk](#). Buy her book, sorry.

Lawrence: No, it's fine. Be authentic. I'll link all this up in the show notes anyway.

Al: I want people to buy her book. It's a good book. It's just I didn't need to read the whole thing. She talks a lot about postures and what they mean socially, and physiologically, and things like that. A lot of it sounds like a lot of [unclear] but it's not. When you understand the physiology of the body it makes sense. You organize yourself in a certain position. You are giving your nervous system a particular imperative basically and how it needs to operate to maintain that. And then it affects your attention.

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I always ask somebody to take their bladed hand, put it on their [xiphoid process](#) and then right below their navel, the two lines created should be parallel before me. We don't want them extended. They shouldn't be vastly separated. They shouldn't be crunched together. This should make it stable. What that does is, it will not only keep the trunk fix but allows the scapula to organize itself around the trunk properly. What you don't see as much of or any of if they maintain it during a chest press is the rounding forward of the shoulders. Because again, for that to happen, the central column has to go first. As long as that stays in place, for the most part, as long as the velocity of the object is kept consistent, the scapula will move around how it is supposed to. You won't see that rounding forward of the shoulders because that will require a curvature in the thoracic spine which means you lost your spinal position. As long as that is maintained, I emphasize to people that's is number one.

Lawrence: You are doing this, Al. You are not on the machine right now. You are just standing there explaining this to them and walking them through it. Love it. Once they master that, I go, "Good. Mirror that on every exercise. The moment I see you lose it for the first few workouts that's where we are stopping." Sometimes I might stop them, tell them what they did, and then have them continue just for rehearsal purposes so they understand turn around and all of that stuff. I don't want to just, they screwed up after the first one, and I'll just call it a day on them. I try to make it instructive. I make it blunt but instructively so it's not punishment in any way.

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I'll have them do that first and in the case of the [MedX Chest Press](#), I'm not going to go into detail about proper setup in the machine.

Lawrence: That's fine. So you're setting up the sit back, you are gapping it appropriately. Go ahead.

Al: One of the things that I've done differently, that I know I might get some kickback on from people, is if you look at a lot of the [MedX](#) equipment, and this could just be for convenience. But most of the back pads are absolutely flat. But if you look at the infographic that comes on the shields. The character in them is always right against the back pad. I can't help but think that has something to do with the design of the machine as well. You draw a character like that on a graphic, that's probably how you meant for it to look.

You have this person in this picture with this ideal posture. My point is that everybody is going to have that. Most people won't. But you should work towards it. In a static posture assessment what they call a wall test where you put your back against the wall, your feet about a foot away from the wall, your butt, your upper back, and your head go against the wall, and you are testing the curvature of the cervical, thoracic, and lumbar spines. There is kind of a 'pass' and a 'fail'. Basically, someone with a normal spinal curvature should be able to stick their hand behind them and get their middle knuckles in alignment with their spine. They should only be able to get their hand

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about halfway through the space between their back and the wall. Any more than that then they have too much [lordosis](#).

Lawrence: [Lordosis](#) is the too much curvature in the lumbar, right? I think I still have that from too much gaming when I was a kid and poor posture. I probably am not addressing that as well as I could be in my strength training. I think it's mild but I still think I have some of that. Yeah, sorry.

Al: That's another topic for another day. But a lot of that has to do with the [iliopsoas complex](#) and its position. It's pulling your pelvis and all that. Basically, this wall test is testing somebody's degree of spinal curvature along the way. I try to set the exercise up for the most part. The [MedX Chest Press](#) I have has retrofitted back pads. It is angled a little bit more backwards. I found that in order for the mechanics of that machine to fit up with a person properly, they need to be as close to their head. It needs to be as close to the back pad as possible without compromising proper head and neck position. What I do is I have them go as far back as they can then I pad the head to where I want it.

Lawrence: Hang on. With a pillow or something like that?

Al: Yes.

Lawrence: Got it.

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Al: Some objects.

Lawrence: Like a yoga block or anything.

Al: Yeah. Now, the concern and I know people have this concern is that the person as they fatigue will start to cline their head and neck into this thing. I know some people use head and neck pillows. I've heard arguments against it because when you put something behind somebody's head they want to push. But you can also shut that off for the most part, and this is a cue you can use to help people prevent scapular elevation or the upper trapezius from becoming involved, by simply retracting your chin like you are making a double chin. It puts that musculature into passive insufficiency so you can't... It makes it harder to shrug. Again, bringing the chin in contracts the deep neck flexor muscle called [longus colli](#) which actually tracks the cervical spine apart a little bit. It is one of those mechanisms where it stiffens your spine up, which is a good thing because the chin is tucked in and they maintain that. If there is a pad behind their head, they are not going to crane back into it because they have to lift their chin to do it.

As long as their chin is back here they are not going to be pushing into the pad in a way that would hurt their neck or cause ancillary muscular involvement in the shoulder group. So you are shutting all that off and now their scapula in the back of their shoulder is as close to the back pad as possible. Which is why you don't see forward shoulder rounding on a laying

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bench press because you're supine. The gravity is forcing the shoulders into the back pad. That doesn't happen on the [MedX Chest Press](#) with a lot of people because of how round a lot of people's spines are. We always want their head and neck in neutral wherever they are, which means if somebody has got a really kyphotic upper back, their head and neck neutral position is like this. They are never going to be able to do that exercise correctly. And because they are not positioned in a way that's moving congruently with the movement arm.

Lawrence: I have someone in mind who we have this problem with. This could be the solution. This podcast really could be the solution for this particular client.

Al: It may be difficult without showing you what I mean by a lot of these things.

Lawrence: You are good at articulating it. It's quite vivid for me at least I think.

Al: Thanks. I'm trying.

Lawrence: You're doing a good job.

Al: The [MedX Chest Press](#) I have is kind of assisting that way a little bit because it's laid back a little bit more than the stock version, which makes the mechanics of the machine a little more...

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Lawrence: God, I'll do anything to come and train at your facility. I would pay good money, Al, to go to your facility and be trained by yourself one of these days. Go on. Sorry, I am just fantasizing over here.

Al: You would also have to check out [unclear] too if you came here.

Lawrence: 100%. I mean, it is one of my goals and it's difficult because I've got a very young family who really need me right now. You know what that is all about. But it's one of my goals to definitely tour around the States and meet all of you guys and just learn as much as I can, and do that on a regular basis. 100%. I can't wait to be able to do that.

Al: Nicole and I love to have you.

Lawrence: I appreciate it.

Al: The position of the back pad of the [MedX Chest Press](#) makes it significantly easier for people to keep their shoulders because it's more horizontal at that point. The mechanics of that make it a little bit closer to a laying bench press which puts you in that position. So just a vector of force. The force vector makes it a little bit better for the shoulder in that way. Having said that, even the stock version. The closer you can get somebody to recreating the wall test with their posture on that back pad, the better position they would be to take full advantage of the mechanics of the machine is my point.

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Even in a leg press. The more organized we can keep somebody's spine from head to pelvis, the better setup their pelvis is going to be to act on the thighs correctly to move the movement.

Lawrence: Just a quick question. In terms of the legs, I noticed the odd client will want to... And I think it is totally incorrect. Where they want to put their legs either side rather than parallel in front. Do you understand what I'm saying? They just let their legs apart.

Al: That has to do with a lot of people's pelvic structures.

Lawrence: To me that looks really uncomfortable because I like to have my legs parallel and directly in front with my knee joint over the front of the pad. Should we be coaching that rather than the legs apart? Does it matter? Or is it personal preference?

Al: It is not a personal reference. It is as much as it is the structure of that person's pelvis. A lot of people have pelvises that are structured a little bit differently. Some people have what is called [FAI](#) which is [Femoroacetabular Impingement Syndrome](#). It is where the femur crashes into the front of the pelvis because of the space there or how anteriorly the femur is positioned in the socket. There's a lot of things to consider. Sometimes the structure of some people's pelvis abduction external rotation with the thigh clears the hip and allows them to actually access the range of motion of the hip.

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Whereas, if you had their feet parallel and their legs parallel they may get some impingement.

Lawrence: Got it.

Al: But then sometimes you are looking at other things that could be corrected and then have them put in a more ideal position, which is a talk for another day.

Lawrence: Sure. Many rabbit holes.

Al: My point is you have to look at the... I mean, while we do have standards we're striving for an exercise. I would say in a leg press the closer you can get the feet and the legs to being parallel the better. You will have individuals who have structures that will force you to diverge from that.

Lawrence: Do you mean chest press, right? You said leg press. You mean chest press.

Al: Yeah, I meant chest press.

Lawrence: Obviously the same as for leg press too, right?

Al: You're using the leg press as an example so I'm still talking about the pelvis.

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Lawrence: No. I was using the chest press.

Al: You were?

Lawrence: Yeah, sorry.

Al: You didn't mention leg press? No?

Lawrence: I promise you. Because what I'm trying to explain is that you're sitting on the chest press and some people have their thighs laid out like this and then pads here so their thighs are apart.

Al: Okay. I don't know why. [unclear] into leg press. Sorry.

Lawrence: You are fine. We've been talking for a while now. You are fine.

Al: No, if somebody's thighs move during a chest press, again they are paying attention to something else. I put a stool in front of them. With the angle of the back pad I have I prefer to have their feet on the top of the stool so their hips are at a right angle. And I'll put their feet in a position where it is comfortable but I don't want to see their thighs waving back and forth. Again, that's not something I instruct out of. What I mean by that is it is not something that happens if they are paying attention correctly to the other things.

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Lawrence: What I mean is, is it a problem if they don't move back and forth? But let's say they start in that position where their thighs are out on a chest press and then they stay in that. Is that problematic?

Al: Only if it affects their ability to keep their pelvis in position. You know what I mean? I guess to some degree, the more you abduct the thighs, the more of an anterior pelvic tilt you're going to get.

Lawrence: Okay.

Al: In some instances that may assist some people who have a hard time maintaining pelvic positioning. Maybe that's a potential solution for something. In general, I wouldn't stray away from just giving them straight ahead if it's at all possible.

Lawrence: Got it. Yup. That was so good. We've talked about positioning in the chest press. You talked about your one specifically with the retrofitted back pad. That's really clear to me. You've done a great job getting up to this point.

So then I guess we are beginning the exercise. What are you saying to the client right before they do their first rep? What are the cues? What are the instructions on the [MedX Chest Press](#) just to keep it simple?

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Al: Well, after making sure I have their hand placement correct, and that I make sure that they understand that the elbow is supposed to stay directly behind the wrist or supposedly directly behind the hand. Which is positioning the hand in such a way that when you push the movement arm, the force vector is going in a direct correction that your body is producing against the movement arm. For the most part, if you have to set up correctly, it will also take care of shoulder positioning and everything else. Maybe watch people and their elbows waning up and down as they are going through the exercise. A lot of that can be corrected by making sure that they don't ever let their wrist move. Because if the wrist is in position, their elbow will stay behind their wrist and they'll just push back and forth on the thing instead of trying to wiggle around with it as they move. I make sure that is in position.

Once they understand their trunk setup and they have all that in position, I say, "Roll your shoulders down and back. I want you to act almost as though you are pushing the back pad away from the handles instead of the handles away from the back pad." That thought usually will initiate a push where they are forced to push back a little bit first which then positions the shoulders against the back pad. They initiate that and I say, "Good. Keep that for the rest of the exercise." And then from there, I have this [metronome](#) on. I have a sequence so that it will start on a certain beat. When they hear that beat all I say is, "I want you to stare straight ahead...", at this spot that I set up in front of them, "...and with your peripheral vision I want you to time your movement so that the movement arm goes from this beat to this beat and

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back.” Again, there is more detailed instruction to that but that has to do with how I teach the [metronome](#).

Lawrence: What movement speed is that typically resulting?

Al: Well, that’s something I’m playing around with a lot too. I think I have 3-3, 4-4 cadence seems to be the best for most things to be honest. That’s something we can also get into another day. I’ve seen some interesting things by changing speeds around. Again, what I’m always looking for is automaticity. I’m looking for the speed of motion. Again, I’m looking for uniform movement for the most part.

When I think of ideal speed, I’m not thinking in terms of what the speed has effect it has on the body necessarily, but what’s the speed that for most people they’ll almost intuitively move at if everything else is set up correctly. Because that tells me something about this in general. One of the things I found is that people have the easiest time complying to their consistency of speed when it is at 3-3 or 4-4. I don’t know why. I’m just saying. If I change speeds, 5-5, 6-6, I see them be less active. I’ll put it that way. They are not hitting their timing as well as often. It is just an observation.

Lawrence: One thing you haven’t said yet is about the carrot. You haven’t given them the carrot yet or are you getting to that.

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Al: The carrot really is the repetition count to some degree.

Lawrence: But there is a gold number, right?

Al: Again, it depends on the protocol that I'm having them use. It's a topic for another day but I have been messing around with alternating between some single set stuff and some cluster set style training with people. The objective number will change based on what protocol I'm using. But I'm cycling the two back and forth seeing how they affect one of the other, and I'm seeing a lot of interesting stuff. Ironically, for single set training, at 3-3, I'm pretty back at [Ellington Darden's](#) 8-12.

Lawrence: If it's their first time on the chest press, would you say, "I want you to try and achieve at least 8 repetitions." And then obviously, if further down the line, they got 9, you'd say, "I want you to try and get at least 10 today." Right? That would be the kind of thing.

Al: Exactly. Now, again, this is all setup contextually. They understand if they break A, B, and C then they don't get credit for this. The way I had the [metronome](#) setup there is a timing aspect to it. I tell them if you are earlier late you are not going to get credit for it. The repetition has a context here. I'm strict but at the same time at 3-3 and 4-4 if somebody misses a repetition by a second, we are not talking about a very gross discrepancy. Whereas, with [Super Slow](#) we were telling people anything between 8 and 12 was

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acceptable. That is 4 seconds. That's huge. A lot can happen in 4 seconds. I just found that ironic because an 8-second repetition and 12-second repetition are not even close to being the same thing. We were telling people that range was acceptable.

Having said that, I have people strive for this cadence and for the most part they are on cue. If they miss it by a second, I'm not going to stop the exercise and say, "Hey, do you get credit for that?" As long as it is a hiccup within a set because you can also account for hiccups at some point. And so that becomes a part of the standardization.

Lawrence: In terms of a [metronome](#), are you just using an app on the phone? Because I know there's loads of metronome apps on the phone or software.

Al: Yeah, I have a metronome app hooked up to a Bluetooth speaker at my studio. I do experiments with the speed and which exercise I'm using it on. I usually apply it to myself when I'm in the studio by myself. Obviously, I'm not going to start changing [metronome](#) speeds on people if I have a studio full of clients. They get rather confused. For the most part, it is a metronome app that I use the time signatures on to create the cadence I want.

Lawrence: [Richard](#), if you are listening, [Richard Chartrand](#) I know you are a huge fan of metronomes. People can go check out his workouts on YouTube. I don't know what his channel is. Is it [Richard Chartrand](#) or [Sustainable Success](#)?

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We'll all link it up in the show notes because I think he demonstrates the [metronome](#) use case quite well.

Al: Part of my book is about it. I titled this chapter 'The Metronome Method'. It is not just about exercise. It can be applied to the learning of any physical skill in a way. There is a lot of research on [metronomes](#) and learning disabilities. It is an entire program called interactive metronome used for kids with cognitive disorders. Auditory feedback really helps to process things a lot more efficiently.

Lawrence: Is that a complete overview of how you would coach the chest press? I mean, just conscious of time. Is there anything you want to add?

Al: No. For the most part that's it. Except that I really harp on the timing of the [metronome](#) with the turnarounds. That's really the skill that they are really working on upfront. Learning to connect it so that it really reforms a continuous loop of movement. I often give the analogy of running around a track. Our goal here, although it is technically not possible, is to run around the tracks at a consistent phase the whole way around. When you are running around a track, when you are raising, you don't get credit if you cut across midfield to go to the other side. You got to go all the way around the track.

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The same thing applies here but what you are trying to do is time up your... You're getting to one end of the track or the other. It is the same time that you're hearing a metronome beat. I've been here two hours and I didn't turn it off. That's pretty impressive.

Lawrence: You've done great.

Al: We are just trying to time up those two events basically. When somebody gets into a rhythm and physically comprehends that speed, you've relieved them of that duty. They've relieved themselves of that duty. Now, everything goes towards their effort in just maintaining that pace. Which is a lot different than the effort that has to go into the straining and struggling against the load.

One of the analogies I use is this is more like running harder than it is trying to move a weight. If you look at how people, how you react to different physical activities, if you were trying to break inertia and move a really heavy object off the ground, your [Valsalva maneuver](#). You globally tense everything in order to mechanically make your body efficient to move this object from A to B. There is really no time consideration other than just moving the thing. But when you're performing an event like running, there is a time consideration and the effort required is going in towards increasing a certain sequence of events in your body so that that speed of motion is maintained. And so when you watch a sprinter run, you don't see tension in their face

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because they don't have time for that. Their nervous system doesn't have time to start letting tension spread that way. It is immediately directed into the areas that are responsible for moving the organism. That's one of the situations where stoicism takes care of itself because of the intensity involved.

I want people to conceive of the exercise as a hill that keeps getting harder to run up with every single repetition but they have to get to the top of that hill at the same time. They don't have time to think about how to get from A to B. You just got to go. That takes care of their breathing. Because when somebody is sprinting they don't think about another breathing, just breathe. Because at some point, after crossing anaerobic threshold your mouth has got to open and you have to get rid of your CO₂. It is not an option. And so if I get somebody's intent correct, those little things that we've always tried to micro manage undo themselves.

Lawrence: Awesome, Al. This has been just an amazing podcast. I don't say that lightly. I've just learned so much and I'm excited to make some changes. I think the listeners will have, but will really enjoy this episode.

Al, what's the best way for people to find out more about you?

Al: Through any of our social media which is [Automated Muscle](#) or [PHX Strength](#). [PHX Strength](#) is Nicole's and I studio. And [Automated Muscle](#) is

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the trademark I'm putting down for my operational theory about how to instruct exercise. How to use this motor learning literature to instruct exercise objectives. We have Facebook handles, Instagram handles, and all of that stuff that I'm not really privy to understanding.

Lawrence: It's Okay. [PHX Strength](https://www.phxstrength.com), isn't it? [phxstrenght.com](https://www.phxstrenght.com).

AI: [phxstrength.com](https://www.phxstrength.com) and [automatedmuscle.com](https://www.automatedmuscle.com) as well.

Lawrence: Yeah, [Automated Muscle](https://www.automatedmuscle.com). If people go to [phxstrength.com](https://www.phxstrength.com), you can also go to the footer and you can see [Automated Muscle](https://www.automatedmuscle.com) there, and you can see all the social links and email address there. It is like a central hub for everything else which we'll link up.

AI, thanks again for taking the time. This has been amazing.

AI: Absolutely.

Lawrence: For everyone listening, to find the blog post for this episode and download the free PDF transcript, please go to [highintensitybusiness.com](https://www.highintensitybusiness.com). Search for episode 362. Until next time. Thank you very much for listening.