

How to Train Without Pain (Back, Shoulders, Mobility & Strength) | Dr. John Rusin

Perform with Dr. Andy Galpin · Episode 33 · September 16, 2026 · Transcript

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Dr. Andy Galpin

The science and practice of enhancing human performance for sport, play, and life. Welcome to Perform. I'm Dr. Andy Galpin. I'm a professor and scientist of human performance. Today I'm talking with Dr. John Rusin. John is a physical therapist and world expert in pain and performance. In this conversation, you're going to learn a tremendous amount about how to stay out of and return from chronic pain. We're talking about back, neck, shoulder, knee, and all of those nagging areas that just won't seem to go away. John's career over the last several decades has focused on specifically that question: how do we make sure we're using things like your warm-up, corrective exercises, soft tissue, and foam rolling tools to make real, measurable, and significant changes? So regardless of whether you are someone who is in a lot of pain or not, there are so many useful tools in this conversation that I think everyone's going to enjoy it.

Dr. Andy Galpin

So with that being said, please enjoy today's conversation with Dr. John Rusin. Dr. John Rusin, you're finally here.

Dr. John Rusin

Finally here. Glad to be here. Thanks so much.

Dr. Andy Galpin

You have done such a good job, in my opinion, of blending these fields of performance and physical therapy. I've not always saw eye to eye personally with the field of physical therapy. That's your academic degree. Your doctorate is in that side. But you moved in this direction. I'm wondering, right out the gates here, can you just share with me how did that get into your brain? Why did you start developing this model that has this combination of being out of pain, being out of injury, moving well, but at the same time trying to perform at your best? How did that come about?

Dr. John Rusin

As cliché as it sounds, I grew up as an athlete myself, and I lived in a household that was very unique because I had my mom, who had a PhD, and she worked at Daemen College in Buffalo, New York, where I'm from, and my dad also had a doctorate, and he had a doctorate in

education, and he was the athletic director of 27 schools in the Western New York area. And that's the house that I lived in, Dr. and Dr. Rusin, and I played sports growing up, and I took that to a college level, and after I was done with my collegiate baseball career, I took a job as a strength and conditioning coach.

Dr. Andy Galpin

Mm.

Dr. John Rusin

Division One, it was my epitome of everything. And very clearly, I knew that I needed to chase some more academics because always been good in school. And I didn't know what I wanted to do because I was already in the weight room. I was already working with high-performance athletes. That was my forever job. And I got introduced to this topic, which was new at the time, doctorate of physical therapy.

Dr. Andy Galpin

Right.

Dr. John Rusin

And I had no idea what physical therapy school was going to be, but all I knew is that I had a scholarship, and I could do that while continuing to coach, and I ended up, two semesters later, enrolled in a DPT program. And within about three months, I realized that chasing the clinical realm for my entire life's work was not going to be doing what I was going to do. And I ended up making the choice that I was going to take that academic credential, I was going to take my degree, I was going to take that license, and I was going to do the insane thing, which was to leave the clinical side of things, actually never entering the clinical side of things, and going right back to where I started, which was sports performance. And out of 74 graduated class of my class, I was the only one that didn't take a physical therapy job. That's how I started into that. I was the ugly duckling. I was the person that went in and did a totally different side of things on physical therapy, moving back into performance.

Dr. John Rusin

But one thing that I did learn is that I had a whole new level of understanding of how to rebuild a human body in pain. And I knew very well that that was going to best serve my athletes and my clients later on in my career.

Dr. Andy Galpin

If I had to guess, Charlie Weingroff would probably be the first guy-

Dr. John Rusin

Mm

Dr. Andy Galpin

... who I came across who has a physical therapy degrees, comes from that, well, was a strength and conditioning coach, a performance coach.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Was doing that stuff a long time ago. And I really feel like, we'll call it a decade-

Dr. John Rusin

Yeah

Dr. Andy Galpin

... maybe 15 years ago, this wave started coming in where the difference between that side of the equation and strength coaches started to merge. For people that have not been in the academic setting, at least in my experience, if you're getting an undergraduate degree in kinesiology or exercise science, there's probably a 90% chance you think you're going to physical therapy school.

Dr. John Rusin

It's true.

Dr. Andy Galpin

And literally, those were the numbers for us forever, and then we realized 5% are going to actually get in.

Dr. John Rusin

Mm-hmm.

Dr. Andy Galpin

It's a very difficult thing to do. Why does that distinction matter, and why did the field start to move there? You gave your personal background, but why is it helping?

Dr. John Rusin

You think about the worst day in an athlete's life, or even a person's life, and it's most likely the day that they're injured, the day that they can't do what they love to do anymore, and the day that they're at risk for never doing it again. So all of a sudden, pain and being able to be back on the field or back into your activities of daily living that make your life worth living, that is the most important thing that you could possibly do. So I think it would be ridiculous to think that in the sports performance realm, that that wouldn't still be true, as it would be in the everyday realm. So I think that there was this blend out there because what really matters in high-end sports performance and athletics? It's being able to make sure that your athletes are on the field or the

court, or they are ready to actually perform, and they have the least amount of barriers in their movement system, so they can just go out freely to move and to perform.

Dr. John Rusin

And all of a sudden, it's not about bigger, faster, stronger when you're at these levels. It's about how good can I make my athlete feel? And then secondarily, how can I make sure that they stay on the field or the court for as long as possible to actually get longevity out of that season, but also out of their careers. And I think that that conversation started to change when athletes started making more money, when it was more of an interesting investment into prehabilitation, into injury prevention, injury risk mitigation, because when you take all of the elements of training and you break them down into one central tenet, it's just making sure that your athletes are accessible. But it's not just athletics. It's making sure that human beings are accessible to their lives as well. But I think that's why it started to take fire, because a lot of people are in pain. Almost everybody's nagging old injuries, and they have things that are holding them back.

Dr. John Rusin

And the best thing that you could possibly do for your performance is reduce those limitations and get them back into feeling the way that they need to feel.

Dr. Andy Galpin

Yeah. The best ability is availability.

Dr. John Rusin

Availability.

Dr. Andy Galpin

Right.

Dr. John Rusin

Of course.

Dr. Andy Galpin

Of course. Cliche there, but quite true. I think where I started liking this field is because I started noticing people are going away from using five-pound dumbbells and two-pound TheraBands and thinking, "All right, that's a hamstring that can deadlift 500 pounds. What is that going to do?" And then you started seeing these people like Charlie and other folks who had come from a traditional strength training background, and they started putting these methods in with-

Dr. John Rusin

Mm-hmm

Dr. Andy Galpin

... the high-quality pain management ones. And I started going, "Okay, now this is a field that actually gets it." I think it's prudent to maybe separate this pain and injury idea into two separate things. You have one aspect where you're trying to reduce likelihood of injury. This is avoiding a hamstring tear when sprinting. But then you have the, "My back just hurts all the time. My neck's in pain. My shoulder always kills me when I play golf," sort of thing. I want to talk about the second one first. There's a lot to say about that first one, but that's really maybe a different conversation. So for that person who is in that type of pain or is feeling the high school injury 25 years later, what is that pain? Where is it coming from physiologically? And then hopefully we can then get into some of your systems about how to resolve that and get out of it, but maybe start there.

Dr. John Rusin

It's a great question because it's not an injury. It's not an acute trauma on the system. We're talking about things that are lingering for weeks, months, years, sometimes decades for the clients that we're working with. And that is an alteration on something that never got resolved when it was an acute injury. It's something that laid in the background of how they move, and it altered the way that they move, the quality of their movement, the consistency of their movement for a long enough period of time that changed their homeostatic point of their entire movement system. And these are the types of things that lay in the background and actually start to compound over time, limiting people from what they're able to do, moving their body. Now, there are a lot of different physiological components to chronic pain, or like we like to say, subclinical pain, because people are still moving, they're still in the gym, but there's always something that's aching, something that's painful when they do this position versus that position.

Dr. John Rusin

Our job is to figure out what that is to make all positions manageable in terms of trying to customize those positions, but also being able to look at the movement system first as our first writing mechanism of how you just make somebody feel better who has been struggling for months, years, or even decades. How do you continue to not force a square peg into a round hole? How do we make alterations in the way that somebody's moving? And more specifically, how do you customize the way that somebody is supposed to move to the way that they were moving when they first got hurt? So it's all about the movement quality and the movement consistency, and it really is dictated by somebody's physical presentation.

Dr. Andy Galpin

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products, I'm really loving their new creatine powder, which is called Signature Spec Creatine. I've long talked about the benefits of creatine for everything from helping to increase strength gains to the benefits it has with brain health. It is one of the most researched supplements in the world and has demonstrated benefits, which is why I make sure to take at least seven to 10 grams a day. This new Signature Spec Creatine from Momentous is the highest quality creatine to date, with 10x fewer impurities and two to five times stricter heavy metal limits than any other premium creatine on the market. All of this is backed by the six stages of testing and certification.

Dr. Andy Galpin

My favorite part is that the creatine is ultra-finely blended or micronized, which allows for it to dissolve rapidly and easily mix into water or whatever liquid I'm pouring it into. If you'd like to try this new creatine or any of Momentous's best-in-class supplements, just go to livemomentous.com/galpin and use the code GALPIN for up to 35% off your first order. Again, that's livemomentous.com/galpin and use the code GALPIN for up to 35% off your first order. How do we know if there is a physical injury? Maybe the back is probably the cliché to go to, right? Where I go, "Man, my back's hurting all the time. Maybe I have a herniated disc. I don't know what that means. You have a bulged disc." I've heard people say things like that. Or I don't actually have an injury, but I have what you're describing. What's the first algorithm I can run in my head if I'm deciding, do I need to get this checked out, or do I have this thing that Dr.

Dr. Andy Galpin

John started talking about where maybe I'm moving bad? And we'll unpack what all this stuff means and diagnostics. You do a great job of walking people through how to figure that stuff out, but how do I even know that first decision tree point?

Dr. John Rusin

Two very simple criteria that you can start off with is was there a traumatic mechanism of the injury, and what is the duration from that mechanism of injury to where you are today? Usually, acute pain is going to be days and weeks after that traumatic injury. So if that's present and you're in that window of duration, most likely that is an injury. You want to go get that checked out, especially if it's not getting better after the 48-hour rule, which is, "Hey, I think I did something bad to myself, but I'm not going to overreact quite yet. I'm going to give it a day or two and see if it starts to move in the right direction," creating momentum for healing and just feeling better. And then the second one is the intensity. The intensity or the pain signal. Using a subjective pain scale, 0 to 10, if you are over that five or six out of 10, that is something that is intense enough where you are clinically in pain or you have a clinical base injury.

Dr. John Rusin

And you're not dealing with aches and pains anymore, you're dealing with something that could

be a little bit more serious. So you look at the duration, you look at the intensity, and those two very rarely are something that somebody's already moving through or something that's chronically overloaded for months or years. That's something that usually happens with a very unique mechanism that happened upon trauma.

Dr. Andy Galpin

What are the most common injuries and presentations that you're seeing in your clients?

Dr. John Rusin

Chronic front-sided shoulder pain. That is the number one pain presentation amongst the active population. Amongst all populations, it's going to be the old generalized chronic lower back pain.

Dr. Andy Galpin

Yeah. Got it.

Dr. John Rusin

And then number three on the list is going to be chronic front-sided knee pain, and then there is a mix of elbow and also hip pain as number four, split number four and number five.

Dr. Andy Galpin

Okay, so every joint you've went through for the most part. Great. Let's just talk about the shoulder then. On average, you guys are seeing thousands and thousands of people a year, that front side shoulder pain, what does that mean? What's front side shoulder pain? And then just give me some of the big categories of why that's happening and then, of course, how you all are being so successful at resolving it.

Dr. John Rusin

So you think about the thing that sits right here usually. It's like, "Hey, every time I go up overhead, ooh, something's happening. Everything I internally rotate, ooh, something's crunching, cracking. It feels painful." Or the one that we are very familiar with is that somebody goes down on a bench press and it hurts right here, especially when the bar goes down to your chest. And that is something that we don't need a clinical diagnosis for it. What we need is a movement diagnosis of exactly why you're compensating, what the movement system's actually saying, how you're actually creating movement solutions that are actually guarding the system, and how to take those away. But the shoulder is a very interesting one because it's not just things that you're doing in the gym. It's not even just things that you're doing in your activities of daily living. It's doing what we're doing right now, which is some middle-aged guys, fairly fit, and we are going to be sitting here for a couple hours.

Dr. John Rusin

And we can't act like this position doesn't matter. This position matters in 2026 more than it ever has because we are ridden with handheld technologies. We are in seated positions more than

we ever been before in human history. And a lot of this inundation of postural stress, it ends up rearing its ugly head when you actually put load onto the system, when you put fatigue onto the system, when you put overall speed on the system as well. So those three factors tends to kind of pick at that scab a little bit, especially when you have an incomplete movement pattern or an incomplete movement system predominantly at the shoulders. So those things are what we look at right away to not just focus in on the shoulder itself, but looking at the entire kinematic chain, the entire shoulder complex, plus the core and the upper quadrant. Because we have so many different ways to go above or below chain in order to actually get somebody feeling good and doing things that were previously causing pain or subclinical pain, and getting them to the point where they're able to facilitate movements that are pain-free.

Dr. Andy Galpin

We'll just stick with the shoulder as a great example to say we could almost split up what you're doing throughout the day versus your training. In other words, is my shoulder pain caused by/is it resolved by just having better posture throughout the day? Or is this something I need to actively do as a more traditional physical therapy where I need to do these stretches and these strengthening exercises? Walk me through those two different elements.

Dr. John Rusin

We are not in the business of telling people not to do what they need to do for a living or for their lifestyle.

Dr. Andy Galpin

Quit your job.

Dr. John Rusin

Quit your job. Quit the podcast.

Dr. Andy Galpin

Got it.

Dr. John Rusin

Put your cellphone in the toilet and flush. We don't tell people that. But you need to be able to call that as a factor for your overall movement health. If you're sitting for seven to nine hours per day, that is different than somebody that would be a construction worker that is sitting for four hours a day. So you need to look at the overall stress load capacity on the postural stressors in your lifestyle, and then you need to look at your training program or the way in which you're going to rebuild your movement health in such a way that can combat those postural stresses. So a lot of people, they don't look at that. They go, "Oh, I know I shouldn't be slouching in this chair. That's going to fix everything." It's not going to fix everything. What's going to fix things is identifying these postural stresses and then looking at your training program, your prehab

program, your warm-ups, your exercise selection in order to facilitate more directed stress so we can start to rebuild and negate some of those negative postural stresses that you have in your daily life.

Dr. John Rusin

You need to look at the realities of what your lifestyle looks like, and then you need to build your training plan and your recovery protocol and your prehab protocols to combat what's happening in your daily life. Most people, as stupid simple as that sounds, they don't look at those two factors together. They look at them in isolation.

Dr. Andy Galpin

Are there any things you all have found effective for that daily life, whether this is a shoulder, knee, back, whatever maybe examples are out there? My assumption would be, and you've alluded to it, if a lot of this is posturally driven, we probably don't want to be sitting all day. We don't want to be slouching. We don't want to be leaning forward on our phones, text neck, all that. Outside of that, have there been any things that you've found effective, tools or technologies or drills or actions or lifestyle changes that are realistic but actually helpful on that piece before we get into the training side?

Dr. John Rusin

I wouldn't even say that this is going to kill you. I would say that you need to take breaks from those positions, and that's probably the most effective things that we use with our clients and the coaches that are managing pain-free performance clients all across the country, is that we use movement breaks within a daily plan. Meaning that somebody is able to stand up every waking hour and being able to posturally reset themselves. And this isn't something that takes 20 minutes. You don't need to do a micro workout. We're talking about 30 to 60 seconds to get yourself in the opposite position as that you just stayed in over the last 30 to 60 minutes. So you can positively impact your positions and reset your entire neurological system and your mechanical system in a matter of 30 to 60 seconds. What we do is have people stand up. We have people stand up, and we get into a Superman position.

Dr. John Rusin

We want to extend the thoracic spine. We want to horizontally abduct the humerus. We want to externally rotate the humerus. We want to bring the shoulder blades down, retract, and downwardly rotate and depress. We also want to bring the neck up into extension, and this is the most important one. We want to take a deep breath in, and we want to squeeze the glutes hard. Do a couple rounds of that, 30 to 60 seconds, just standing up from your desk. Just putting your phone down and taking one step and doing a couple of these, it's hugely beneficial. And for the people that see benefits from that, which is like it's very potent, you'll see a benefit instantly of the way you're feeling after the end of a workday, especially if you're desk bound. We'll start to

work in other little, tiny tools, things like having a micro band in their office, being able to have a pad to kneel down on during the day right in their office.

Dr. John Rusin

We do a lot of face pulls, pull aparts with the bands. We also do a lot of half-kneeling hip flexor stretches and hip mobilizations down off of that pad. So a combination of the postural reset, a couple banded activation drills for the posterior chain of the upper body, squeezing your butt, and mobilizing the front side hip flexors, that is extraordinarily effective. And if you are training in the morning or in the evening, this will be very, very effective for you because you'll be able to recover throughout the day if you're training in the morning or just go into your 5:00 or 6:00 PM workout not feeling like crap like you have to spend 45 minutes warming up just to get a good sets of squats or deadlifts in. So I think that what you do throughout that eight to 10 hours during the day is going to dictate the higher quality of work that you can have before or after. We all get into those inundated states where you're just in the zone.

Dr. John Rusin

You're kind of feeling that ache come on. Stand up, reset yourself. It'll only cost you 30 to 60 seconds. You sit back down, and I can almost guarantee the quality of your body is going to feel better. But also mentally, if you're working on deep work and you're just feeling like crap sitting in your chair, you're probably going to be focused on that and not actually on the thing that you're doing. So there's many different influences that it can positively impact.

Dr. Andy Galpin

Have you seen standing desks and or walking treadmills helping, hurting, or a combination of both?

Dr. John Rusin

It's not a cure-all for everything. I think if it's an option, it is going to be great. Standing desk, awesome, but make sure that you can sit down as well. If you're walking 27 miles per day on your standing desk treadmill, that's also a problem as well.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

We need a little bit of a recovery factor there. But I see the best amount of success with somebody just being able to change their positions throughout the day. So you can spend a couple hours in seated, you can spend a couple hours standing, you can ambulate and walk. A standing treadmill desk is really good for that. But also, you can just simply work, too, and just make sure that you're breaking it up two to four times per day and resetting yourself, and probably that's going to be the most successful. I'll show what I do. I have a standing desk in my

house. I'll stand for a little bit. I'll sit for a little bit. I'll sit in a different chair for a little bit with my legs kicked up, and then I'll also do a lot of calls where I'm walking. So I'm just trying to alter my own positions because I'm not pointing the finger at anyone saying, like, "Oh, you shouldn't be-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... using your cellphone or your computer or taking conference calls all day." I do that every single day, and I'm no different than anyone else. But you start to find solutions with your own body and then with your own clients' bodies and then widespread across a lot of the data points that we're using, and you see a large-scale impact on just positively bringing everything back up. And it's just one thing that if we take the principle away, is that your next position is your best position. That is how you break up your days without having the postural stresses actually wreak havoc on your training performance itself.

Dr. Andy Galpin

Do I need to be conscious and aware of my posture when I'm at work? If when I see myself, feel myself slouching, should I be coming back up and pulling my shoulders back, or is that just really not worth the squeeze?

Dr. John Rusin

It's an old myth, right? It's like, "Oh, I found myself slouching. Got to get back up." It's like our kids at school. What do you think their posture looks like in their desks?

Dr. Andy Galpin

Yeah.

Dr. John Rusin

I can tell you right now, my son Cam, he is slouching over in the desk. He's fidgeting all around because the body wasn't meant to just sit here for seven or eight hours. It wasn't meant for children. It's not meant for us. So how do you actually combat that? So I think that we need to take two things into account. If your posture is causing chronic tightness or pain to the level of, "Wow, I'm actually focused on that versus what I'm actually doing," then you need to stand up, and you need to actually do something to break that cycle. But I don't believe that somebody needs to be hyper-focused on this. It's insane. We're living in a different day and age. You're going to have these stresses on your system. I'm not telling anyone not to work. We just need to call it what it is and then be able to create more sustainable solutions for reversal on the front or the back end of those days. But I am never one to say, "Hey, don't do this."

Dr. John Rusin

Don't sit like this. Don't hold your cellphone like this. Don't do this podcast like this." It's not going to be sustainable for anybody.

Dr. Andy Galpin

Yeah, sure. It's very reasonable approach, in my opinion, to that. I also know you are a big fan of doing your warm-up routine every day.

Dr. John Rusin

Mm-hmm.

Dr. Andy Galpin

So the warm-up that you do for your workouts, you want to do those every single day. Why are you such a fan of that?

Dr. John Rusin

So we use something called the six-phase dynamic warm-up system, and now it's called the six-phase sequence protocol because we realized that it's not just for warm-ups. It's your 10 minutes of daily body maintenance every single day if you want to be able to maintain your movement integrity, your movement system quality. So when you think about it like that, it's essentially something that can make you feel good. It can mobilize you through ranges of motion. It can have you working on motor skills that can compound over time to developing meaningful skills that can transfer into your life. And also managing your central nervous system in such a way that you can spike and lower the sympathetic rate to the point where you are in tune with how your body is feeling and how your vital metrics are functioning. So this is something that is mandatory for every single one of the clients that we have because it simply compounds over time to have huge amounts of downstream benefit.

Dr. John Rusin

But also, if you put it before your warm-up, you're also feeling and functioning and neurologically heightened to the point where you're going to perform really well as well.

Dr. Andy Galpin

So this is something you're obviously going to do before your training session. Is this also something that I can do in the morning, in the afternoon? Does it matter?

Dr. John Rusin

So if you are training that day, you are going to have a best time investment of using 10 to 12 minutes to run the six-phase protocol before your training session, and you will be programming the things that you do in that six-phase protocol based on two different factors. One could be your chronic linchpin, AKA the thing that hurts, or the movement deficit that you have. So you're going to go directly at that thing, so you can improve that thing, get it functioning well, so then

you can transfer it into performance that day in your workout. Or if you're feeling pretty good, you don't have any chronic pain points on your system, which is like 7 to 8% of the population-

Dr. Andy Galpin

Right

Dr. John Rusin

... calling that one out, you can then go in and look at a performance-based KPI addition of the six-phase warmup. So that means that, hey, the big, hard, and heavy lift of the day is a bilateral squat pattern. We're doing a five-by-five traditional protocol, and you know what? We're going to emphasize this entire warmup to prepare me to be best on that five-by-five squat by orchestrating movements in the six different phases of the warmup around the squat itself. So that's where pain-free performance comes from. If you're dealing with pain, the goal should be pain-free. If you're pain-free, then you should be focusing on performance. And once you are focusing on performance, the goal is to make that a feedback loop where you're always guaranteeing, or as close to a guarantee as we can get, to do smart, sustainable things in your training and in your lifestyle that can keep you feeling good for the long run.

Dr. John Rusin

I think that's called longevity.

Dr. Andy Galpin

Would love to get your thoughts on how you train for performance while not losing long-term health either. But we got a ways to get there. So, a little bit of a teaser. We want to get to that later. Six phases. All of them are intricate, but actually quite simple.

Dr. John Rusin

Yes.

Dr. Andy Galpin

And I want to reiterate, six phases, but you said what, 12 minutes total?

Dr. John Rusin

Yes.

Dr. Andy Galpin

Hear 10 minutes, something like that?

Dr. John Rusin

10 to 12 minutes, so you're thinking about investing one to two minutes per phase, and you would be doing six individual exercises, and each one has its individual phase in a block. So it's very simple. I know it sounds like a lot, like, "Oh my God, six phases?"

Dr. Andy Galpin

Yeah.

Dr. John Rusin

"Six different exercises I have to select based off a linchpin that hurts or a movement deficit that I have?"

Dr. Andy Galpin

Yeah.

Dr. John Rusin

It's super simple. Let me walk you through it. So phase one starts off with soft tissue work. Predominant tool that we use is a foam roller. We're not foam rolling every nook and cranny of the body. We are looking at the thing that, again, we want to improve in terms of pain response or in terms of movement, range of motion, or quality. So we're foam rolling one to two minutes, and we're doing that on both sides. So say your left knee hurts, you're still going to foam roll your right quad. So one to two minutes there, phase one is soft tissue work. Phase two, you're going to take whatever that soft tissue tool was on, and then you're going to go through a more dynamic oscillatory stretch, not static stretching before a workout. I get a lot of flak for that one. It is not static stretching. It is an oscillatory pulse stretch where we get out on an end range, and we move in and out because the body thrives with movement, even with stretching.

Dr. John Rusin

Phase three is more traditional because we are going to look at a corrective exercise that explores the range of motion that hopefully we opened up in phase one soft tissue and phase two stretching. So we're going to use a corrective to actually explore movement. This is our play associated with phase three.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

One to two minutes there. I don't care about sets and reps there. I just want you to move through and go, "Oh, that feels good. That feels different. Wow, I haven't felt that range of motion before." That's the goal there. Phase four is activation. So we're trying to then load the system in such a way that we have active dynamic movement moving through that new explored end range, so we can then have a neuromuscular response to stabilizing end ranges. This is a lot of banded work, a lot of body weight activation drills. We're not trying to hammer or annihilate tissues here. We're trying to wake things up. And then phase five is essentially just practicing the movement patterns that you have planned that day. If it's a lower body day and you're going to squat and hinge and do some single leg work, you're going to practice your squat quality. You're

going to go through a pattern of hinge where you can actually grease the groove of the movement pattern.

Dr. John Rusin

So those are practicing times in order to actually work on cues when loading and volume and fatigue is not in the system yet. And then the final phase is phase six, central nervous system stimulation. So once we practice the patterns, we're going to put power, we're going to put explosiveness, we're going to put more ballistic nature if somebody is able to do that, and we're going to just heighten the central nervous system from a post-activation potentiation of phenomenon's effect.

Dr. Andy Galpin

Incredible overview. If you'd be so kind, I would actually like to go through all of them.

Dr. John Rusin

Yes, let's do it.

Dr. Andy Galpin

So let's say that my linchpin or my KPI is my quads for some reason. First two minutes, I'm going to spend foam rolling my quads. What's actually happening in those two minutes, and why does it matter?

Dr. John Rusin

So before we jump in, it would be important to say that sometimes we don't, almost always, we don't look at a particular muscle. We look at an integrated pattern. So we would never identify, hey, the quads are our linchpin because the quads are just associated with the entire kinematic chain, so you would have to look at a linchpin that is either regional in terms of the hip mobility deficit, hip stability deficit, that being there, but then we actually end up working on the quads. But the goal would be ultimately to try to impact a key area or a key pattern. So the way that we would look at that is, I know exactly what you're saying with the foam rolling of the quads, but we would look at, hey, we're trying to positively impact the squat pattern there because the quads are going to be most active in the squat versus a hinge or even a single leg. Or we're going to try to impact hip mobility, which will downstream effect impact the quads and its movement patterns itself.

Dr. John Rusin

So linchpin versus a key performance indicator. So it would be squat or hip mobility as the two examples. But that would bring us to phase one. So we'd be foam rolling, say, the quadriceps, and we would go at that very specifically because we want to be able to have somewhat of a test retest. It's not just about, "Hey, let's roll around on the foam roller. Let's hump the floor a little bit. Let's just get feeling good." That's what people that don't believe in soft tissue work think it does.

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

It's like, "Oh, that's just a thing to make you feel good." I'll take that.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

I'll take feeling good, but I also want to be able to quantify it as well. So we have this opening window when you do soft tissue work the right way. Say we're foam rolling the quads. Most likely, if it's right down the medial aspect of the quadriceps, we're looking at the rec fem. We're trying to get hip extension with knee flexion. And then all of a sudden, you're getting into positions where you're like, "Wow, I have more hip extension here. It's putting less stress on my knee. I can actually see a positive impact from one to two minutes." We don't always do this very scientific test-retest because it's a training session. It's a warm-up. But we're trying to see that impact. But when we're in phase one, we're not going up and down the foam roller across the knee all the way up to a hip. We call it going hunting. So we get the foam roller on the key area, and we're going hunting for the spot that is very clear that something's up.

Dr. John Rusin

We don't know exactly what's up, but we know that it feels different than everything else. Usually, that's going to be a subjective pain response. That is instead of a one, it's going to be a four. And then you're going to sit there, and you're going to actually oscillate over those areas for 20, 30 seconds, and we're going to use micro movements, two to four inches of relative motion of the foam roller going. And the key here is that we find one or maybe two of those spots. Those spots on the area are going to positively impact the way that our tonicity is hopefully going to reduce, and our overall movement stress is going to reduce. That leads to better movement and better mobility. It's very, very simple with that. But when we look at that, we're not trying to be in pain. When people hear foam rolling or soft tissue work, they think like, "Oh, down on a massage table."

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

And a 400-pound Samoan dude putting his elbow into your back. That's not the pain response that we're looking for.

Dr. Andy Galpin

I'm in. Sign me up.

Dr. John Rusin

The pain response that we're looking for is you want to feel something happening, but our limit is a four out of 10 subjective pain scale because what is more sympathetic in the world than pain? Pain is the most sympathetic thing that there is. Ever be in a 10 out of 10 pain, you are going to skyrocket your vital metrics.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Our goal is to actually down-regulate the central nervous system, get into that parasympathetic mode, actually reduce vital metrics, so then we can on-ramp later more strategically. The key is that it's not a be all, end all of everything. A lot of the soft tissue literature just looks at one single modality, foam rolling-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... stretching, all this stuff.

Dr. Andy Galpin

Sure.

Dr. John Rusin

It's how it integrates into the rest of the plan. Think about a foam roller as just a one to two-minute opportunity window that gets to be opened, so then we have the opportunity to step through and get onto the next phase, which would be stretching.

Dr. Andy Galpin

You hear this pretty common explanation of the pelvis is anteriorly-

Dr. John Rusin

Mm-hmm

Dr. Andy Galpin

... moved forward, potentially even posteriorly. Either way. How would solving, addressing foam rolling for one minute on my quad do anything to my hip that would do anything to my low back pain?

Dr. John Rusin

The reason that I believe that soft tissue work is so effective in controlled and graded prescriptions is because it's novelty of an external tool placed on an internal system. Let me

introduce that. So when you think about training, you're moving your body through space. Very rarely do you have an external stimulus that comes on your system that changes the way that your neurological systems are able to up or down regulate the amount of tension and tonicity globally throughout the system. So when you introduce something that is novel like a foam roller, or I'm going to get a lot of flak for saying this, but the popularization of functional dry needling, all of a sudden you have this external tool that enters the system. We really don't know why the hell it's working. If you're looking for an exact mechanism of why that physiologically works, because we all know it works.

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

There's a reason that everyone's using this stuff. It's because it's the novelty impact that goes , boom, reset, and it has allowed to centrally down regulate your sympathetic nervous system, and it's also allowing you to just reduce global tonicity in the tissues.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And again, it's just an opportunity window. But when you're looking at trying to put a foam roller over key areas, we're not necessarily looking at breaking up scar tissue. We all know this. You're not going to break up adhesions with a piece of foam or even a lacrosse ball. You're not going to make the muscles longer. The only way to do that is to take the origin and insertion and change where they're actually at, and that's called surgery.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

We're not doing that with the foam roller, and we're also not changing any structural integrity of what's underneath the skin. But the cool thing about placing an external stimulus onto the internal system is that all the downstream impact that we can have, it changes the way that your body perceives its kinesthetic awareness. So you have that impact coming in, and it actually just opens up that opportunity window. And we've seen that time and time again that people think that they need to be foam rolling 10, 20, 30 minutes a day, and they need to get it all over the place. Maybe we want to focus in on one spot because if you put a foam roller there, it's going to drive blood flow into the area slightly. If you put it on the right area, you can probably lubricate a joint space or stuff like that. But that's not the real big benefit. The big benefit is that you can simply get a novel stimulus into the system to down regulate your tonicity and tone.

Dr. John Rusin

And that is something that is global throughout your body, and it is not local.

Dr. Andy Galpin

One minute of foam rolling on my quad, probably not winning the game of breaking up scar tissue- ... but potentially letting the entire nervous system calm down. That's why you're going to see an acute change in range of motion.

Dr. John Rusin

Yes. There's a caveat to that, though. So the way that most people are foam rolling or doing any soft tissue today is not going to be conducive to them actually getting a positive benefit. The big problem, and also the big potentiator if you can do it right, is managing your breath cycle while you are having soft tissue work being done on you or doing it as a self-directed tool yourself. The combination between deep breathing with a parasympathetic response centrally with that external stimulus coming in from the foam roller, it's like peanut butter and jelly. They need to go together in order to taste good. So if you do one without the other, it's going to be very difficult. And if I were to pick one to downregulate the entire nervous system, it would be tapping into our breathing protocols. But if you can take the benefits of managing your breath cycle with the novelty benefits of a soft tissue technique, that is where all the really good downstream effects happen.

Dr. John Rusin

And the same thing could be said for stretching. Stretching into pain, stretching with a low amplitude of breath, that's not going to work either because as soon as you start altering your breath cycle, your body naturally defends itself. And when your body defends itself, it perceives threat and everything closes down. All your extremities want to move back into the central line of stability. It's just not something that we're looking at in terms of getting a global response of improving mobility or reducing pain. So you always got to remember if you're going to be doing soft tissue work or any mobility or stretching protocols, you need to keep the breath flowing naturally, and you even need to extend out the breath in terms of inhalations, exhalations, and using your nose versus your mouth.

Dr. Andy Galpin

Gurgling in pain? Probably not how I improve my range of motion.

Dr. John Rusin

We have a lot of different soft tissue practitioners out there. Not as many as there was maybe 10 or 15 years ago, but it used to be like cause pain.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Get into pain. Put a kettlebell right into your gut, and if it hurts at a 9 out of 10, make sure you get to that 10 out of 10. Or get a barbell and put it on your biceps tendon.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And roll the knurling into your bicep before either all the hair tears out or you get a rash from it. And if you can take the pain, you're going to get more benefit.

Dr. John Rusin

I've been there before. I've played with everything over the course of my career, and I can tell you right now if we can keep it more low level in terms of pain, then you're going to have a better pain-free response.

Dr. Andy Galpin

Today's episode is sponsored by LMNT. LMNT is an electrolyte drink that has an ideal electrolyte ratio of sodium, potassium, and magnesium, but no sugar. Hydration is critical to performance, both physical and mental, and countless studies have shown that even a slight degree of dehydration, even as small as 1%, can lead to decreases in physical output and mental performance. We also know that electrolytes are critical to proper hydration, which I've been harping on for years. But you can't do that, proper hydration, by only drinking water, especially if you sweat a lot. You need to get the right amount of electrolytes in the right ratios, and that's why I'm a huge fan of LMNT. In fact, many of you might remember that I featured LMNT in my YouTube series on hydration nearly six years ago. I featured LMNT in these videos because their blend of 1,000 milligrams of sodium, 200 milligrams of potassium, and 60 milligrams of magnesium really is unique and different than any other electrolyte on the market, and it has great scientific support.

Dr. Andy Galpin

I use LMNT on nearly a daily basis, especially when I'm doing really hard training in the heat and I'm sweating a lot. If you'd like to try LMNT, you can go to drinkLMNT.com/perform to claim a free LMNT sample pack with the purchase of any LMNT drink mix. Again, that's drinkLMNT.com/perform to claim a free sample pack. I know I'm dragging this thing out, but I am actually just really interested in a lot of these things. Where are you currently standing, before we get to phase two, on the idea of tight versus weak?

Dr. John Rusin

Hmm.

Dr. Andy Galpin

So hip flexor, how do I know if it's tight and therefore I need to stretch it, I need to mobilize it, I need to foam roll it, or if it's weak, I need to train it?

Dr. John Rusin

The best thing about the six-phase system is you're going to do both no matter what.

Dr. Andy Galpin

Okay.

Dr. John Rusin

Tight or weak is always a very interesting question because that's what we learn in physical therapy school.

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

Where we have to have one mechanism that is going wrong. Well, the average person has 2.3 chronic pain points on their body. The average person has 3.5 movement patterns that are disused or dysfunctional out of the six. So we have a lot of different stuff going on. Tight and weak happen simultaneously.

Dr. Andy Galpin

Ah.

Dr. John Rusin

That is why we mobilize and then we restabilize with activation because almost always where you find tightness, you're going to find weakness, especially at end ranges. And when you find weakness at end ranges-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... you're almost always going to have true mobility deficits, meaning that you can't stabilize the active range of motion that your body has passive access to.

Dr. Andy Galpin

All right. Well, then we'll just go through steps two to six, but you have to give me one more definition before we go. Mobility versus flexibility, so we can be on the same page as we get into some of this jargon terminology.

Dr. John Rusin

Mobility is going to be more actively controlled. So you think about what you can actively move your body through, and mobility is not just isolated joint end ranges of motion. It's the ability to actually display movement patterns or compound movements with two or plus joints moving at once through a full and complete range of motion. So mobility has a stability component to it, whereas flexibility is more passive. Flexibility is what your structural system has access to, say, if somebody were to bring you through that range of motion with a lack of active stability in its process. A very good example of this would be somebody laying down on their back doing an active straight leg raise. Their mobility would be how high can they get it on their own? Their flexibility would be how high can I put them through it while they're trying to relax and they are totally taking stability out of the equation?

Dr. John Rusin

That's the one that always people look at.

Dr. Andy Galpin

Is the gap between my mobility and flexibility significant?

Dr. John Rusin

On average, it's going to be about 15% to 20% is going to be normal. So duh, somebody can move you through more range of motion than you can move through yourself. But we have this concept called the motor control gap. The motor control gap is essentially the difference between an active and a passive range of motion, and when it exceeds that 15% or 20%, that opens up a range of motion that your body could have access to, be forced into, but you don't have the active ability to stabilize around it.

Dr. Andy Galpin

Hmm.

Dr. John Rusin

And this is going to be those end ranges of motions or those end ranges of motions on the movement patterns where we are going to be most vulnerable to pain and injury.

Dr. Andy Galpin

Question on both sides of that spectrum. If my gap is 1% versus 50%. So what's happening when my gap is none? When I have the same range of motion as I have, or my flexibility as I have mobility, and then the opposite where, say I'm way past that 20%. Walk me through what's happening in the first one. I have no difference.

Dr. John Rusin

So there's going to be two different scenarios here. So you have no difference, that can mean that you're the best athlete in the world, you're the most mobile person in the world.

Dr. Andy Galpin

Complete motor control.

Dr. John Rusin

Complete motor control, but that could be one of two things. It means that you have full and complete range of motion for flexibility, and you fall within the average rates of a human body. But then you have the other presentation, which is your active is the same as your passive, and you're still hugely limited in both.

Dr. Andy Galpin

Yeah, that's what I was thinking. You're probably very poorly flexible.

Dr. John Rusin

That is when-

Dr. Andy Galpin

It's the only way you're going to get there, right?

Dr. John Rusin

That is when you start to utilize the tools within our system to try to break that down and put more compounding benefits into a daily practice with it.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Something's not going to happen overnight, especially with mobility. It's not these quick fixes that you see on Instagram. It's not these shiny object, quick hacks, 10 seconds to hamstring mobility. It doesn't work that way. And if it even does, I've had clients that I do something magical to in a couple minutes.

Dr. Andy Galpin

Sure.

Dr. John Rusin

They'll revert right back if they don't actively follow it up with smart, progressive plans for maintenance.

Dr. Andy Galpin

Yep.

Dr. John Rusin

So, that is one scenario, but the other scenario is that you have these motor control gaps, not only between passive and active, but most things on our body are bilateral, so you have two of

them. So you start to have these asymmetries in your motor control gaps on right to left, and that becomes a bigger issue of like, okay, you could have discrepancies right to left on size, on muscular strength, on mobility, on flexibility-

Dr. Andy Galpin

Uh-huh

Dr. John Rusin

... but also motor skill and balance.

Dr. Andy Galpin

Yep.

Dr. John Rusin

So all these things, we want to get them as close together as possible, but knowing very well that the right and the left side of our body is different. We are not perfectly symmetrical beings. We've never been. We're seeing really cool, it's not cool, but it's real literature on the effects on prepubescent structural stress on the shoulders. Kids in the Little League World Series.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

150 pitches a weekend, 10, 11, 12 years old, and all of a sudden, they have a totally different shoulder complex on their right side versus their left because the structural differences in there. So we have differences between the structures of the shoulder. Structures of the hip are actually very interesting as well. They're not as marked as the shoulders, but the hips are anywhere from 12 to 15% different right to left-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... in terms of shape, size, and also acetabular orientation. So we need to take all these things into account, but that's why it's never going to be exactly the same right to left, like they taught you in the textbook. Motor control gaps are never going to be exactly the same in terms of passive and active. But if you were within a range, we have established that range in the motor control gap.

Dr. Andy Galpin

Totally makes sense. The opposite of the spectrum. So I've got a 50% difference between active and passive. How is that going to present? Or if that even matters.

Dr. John Rusin

So we would define that as a stability deficit most likely.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Whatever that site is. In Pain Free Performance, we have three lines of remediation for every movement restriction or movement pattern that needs to be remediated. So you think about mobility or stability or skill. So if you have this big gap, you have all the flexibility in the world, and you only have 50% capacity in your active range of motion, you have a 50% motor control gap. That is where we would go into a stability linchpin protocol.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

A stability linchpin protocol means that we need to actively get you into these ranges of motion, but we most likely need assistance, and then we need to actually implement protocols to be able to structurally go down the line of stabilizing it where we need the stability. And that's accessing the range of motion, but then using tools to actually gain tension, stability, and recruitment where we need it the most.

Dr. Andy Galpin

So what we're talking about is a scenario in which somebody has the ability to get to X range of motion, but when they do it on their own, they get halfway there. Why is their body stopping them?

Dr. John Rusin

That is a great question. A lot of it is due to the bio-psycho-social-physical aspect of movement.

Dr. Andy Galpin

That was a lot of word.

Dr. John Rusin

Yes, it was.

Dr. Andy Galpin

Bio-psycho-social.

Dr. John Rusin

So, there are many times, we'll use the hamstring as an example.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

We'll go down the line of the active straight leg raise. There's a lot of people with self-perceived chronic hamstring tightness, and they become almost a self-fulfilling prophecy because maybe an old lower back injury, they've been guarding it over time. Their wife's been telling them that they need to start hamstring stretching if they want their lower back to feel better, but they don't, so they feel guilty about it. And then they have a learned avoidance of even if they are training or exercising, where they're not even exploring the range of motion, let alone training it actively. And then there's a physiological component of like, if you don't use it, you lose it.

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

So all these factors are playing into, oh, now I'm just globally tight. So you think about that as like the restrictor plate on your movement system. And many times when we see global tightness, say for the hamstrings, like a toe touch test.

Dr. Andy Galpin

Mm.

Dr. John Rusin

Somebody standing upright, they go down to touch their toes, and they don't even reach their kneecaps. Very rarely is that just a hamstring thing.

Dr. Andy Galpin

They're not that tight.

Dr. John Rusin

It's usually a global restrictor plate on the movement itself.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

So we'll see compensations happen at the front side of the deep hip flexors. We'll see compensations happen on the deep six rotator group on the back side of the hip. We'll see global tightness happen all around because usually centrally, their line of stability is lacking. So that is almost always why we go at core or hip stability for those people, and we facilitate stability by pushing them into greater degrees of mobility where they trust their system.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

So, vast majority of people that are feeling chronically tight in the hamstrings, it's not a postural thing, it's usually not a length thing, it's not a tissue quality thing. It is more so being able to restore exposure into being able to grade into a range of motion that they have neglected or lacked, and you have to do it over a course of a period of time, but you don't just go in and try to get into those positions.

Dr. Andy Galpin

Mm.

Dr. John Rusin

You use things like foam rolling or stretching or corrective movements in order to facilitate it going better that time. So it's like the opportunity window opens again, and that's the ability to go in and try to really improve upon the overall presentation. Very rarely are you going to have tight. Very rarely are you going to have short. Very rarely is it going to be an anterior pelvic tilt that is the reason that your entire health status is falling apart.

Dr. Andy Galpin

Right.

Dr. John Rusin

It's a combination of all these different things. But if you can go back through, again, the principle of not only looking at the exact site that you think is tight or painful, but looking down and upstream from it, you can actually look at the patterns themselves and the region itself, and very rarely is that something that is overall a restrictor for somebody's lifestyle, somebody's performance, or long-term into their lifespan.

Dr. Andy Galpin

And how often would this problem be associated with something akin to a tight hip flexor? Is that a real thing you're seeing, whereas if their hip flexor is tight, it's pulling their hips forward, which are causing their hamstrings to be tight, ala stretching the hamstrings won't do anything, you actually need to go back and stretch the hip flexor?

Dr. John Rusin

There's a very simple screen that we run, and it's the top-down hinge screen, and it's simply going through an almost like a toe touch test. You're trying to keep better spinal neutral while you do it, so you can actually not be compensating through the back and actually looking at the length of the hamstrings as the hips posteriorly translate. So you're essentially just going down hand over hand and going down the front side of your thighs. If you can't get past your

kneecaps, I can almost guarantee that you're going to have that restrictor plate on your system. You're going to have that global tightness. You need to go centrally at your core and your hip stability. If you can get down past your knees and now you're going from your knees down to your toes and you're in that range, that is where you can have more of a key emphasis placed-

Dr. Andy Galpin

Mm

Dr. John Rusin

... on the mobility itself of the posterior chain. Many people don't make that distinction between these two things. If you're so restricted that you can't move anywhere, then that's going to be a central line of stability that we need to work on. But if it's something that is truly like, hey, it's a mobility restriction or even a flexibility restriction, you're kind of in the game. Like, the other one's not even in the game.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

You're in the game. You're able to actually have a more direct approach at influencing that moving into better mobility.

Dr. Andy Galpin

Yeah, if absent something like a spinal fusion surgery occurred in your past or something, if you're talking about bending over and you can barely touch your knees, not your toes, I don't think we have tight hamstrings as our first diagnostic.

Dr. John Rusin

That's a great example of having a structural change in your system influence something that grabs everything on.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

You think about spinal surgery. That's pretty aggressive. But that impacts not only that segment, it had all the tissue that you had to cut through.

Dr. Andy Galpin

Mm.

Dr. John Rusin

And also the general guarding that happens regionally that is just trying to keep you safe. But

part of the great rehabilitation is to not only work on the site, not work on making sure the wounds aren't becoming infected, making sure that it's not painful at that site and area, but actually restoring your ability to take that restrictor plate off the system. Ultimately, that's what physical therapy is going to do in a post-surgical setting. It's not only restore the patterns because of mechanical nature, but it's also doing it from a manipulation of somebody's confidence in their neurological systems to just get back into doing what they're able to do. But you have to take that away centrally first.

Dr. Andy Galpin

At the risk of annoying you and the entire audience- ... I'm going to ask a few more questions before we go to step number two here. You're just teasing me with too many things that are actually really interesting. I know you're not on the clinical side. You're not the one who's making a career taking somebody off of an ACL surgery and back to normal. That said, spinal surgeries, are you noticing a rise, a reduction in these things? Word on the street about the clinical outcomes. This is a really controversial topic on these things. So I'm just wondering, without claiming expertise on this yourself, how are you thinking about this, and what are you hearing for the extreme low back pain? Do I have surgery? Do I not surgery? I get these questions actually a ton, and I'm like, I don't have any idea how to answer this stuff.

Dr. John Rusin

This is a great question. We're definitely seeing waves and trends in rehabilitation and surgical pain management around the lower back today, and I think that the trend of this industry is moving into knowing very well if there's a red flag sign and symptom, we got to do something. And what is red flag? A red flag is a 10 out of 10 pain response that puts you into the emergency room. It's the loss of bowel and bladder function. It is the inability to stand and ambulate. When you're thinking about that amount of degradation of your function, that is something that you're probably going to want to go in and get checked out right away. Doesn't necessarily mean you're a surgical candidate-

Dr. Andy Galpin

Mm

Dr. John Rusin

... but that would be the most likely person for that. But we've been just sold a bad bill of goods when it comes to spinal surgery, especially in our country today, because we get sold, "Hey, surgery means that everything's fixed."

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

"I just go in and have surgery, I go to a subclinical pain management center, and then I just stand up and I'm able to deadlift again, and this is all great." And there's even physician groups out there today that don't do any sort of prescription of physical therapy after something as aggressive as that.

Dr. Andy Galpin

No.

Dr. John Rusin

Yes. So you see this type of thing where it's just like, hey, this stuff doesn't matter. All that matters is that we have a minimally invasive surgery, so we don't dysregulate the entire movement system. We just try to go in and laser approach in terms of the way that we're insulting the actual tissues-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... in the region itself. I'm not a huge believer in that. Yeah. I don't believe that spinal surgery is going to be the best means of remediation for somebody's lower back pain, and I think the data will line up with that, and the more data that we have will prove that to be true. But that being said, I think that there are places and times where it is-

Dr. Andy Galpin

Of course

Dr. John Rusin

... a medical necessity.

Dr. Andy Galpin

Of course. Of course.

Dr. John Rusin

In my specialty, it's usually not a medical necessity.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

We need smarter rehab, and we need more sustainable training protocols that builds them up over time in a more graded way that gets them ultimately back to where they want to be. Every now and then, I will manage clients on a consulting basis that are looking at this exact

conversation for them and their body. And every single time, my number one recommendation is that I want you to treat your current presentation like you already had surgery. I want you to-

Dr. Andy Galpin

Oh, interesting

Dr. John Rusin

... hire your physical therapist.

Dr. Andy Galpin

Interesting, yeah.

Dr. John Rusin

I want you to hire your soft tissue specialist. I want you to go in and work with your physician, even if we're trying to get more new things in the system nutritionally or supplementally-

Dr. Andy Galpin

Right

Dr. John Rusin

... or even pharmaceutically. I want you to treat this like it's already happened, and that is your first line of remediation.

Dr. Andy Galpin

Okay.

Dr. John Rusin

And more times than not, I would say 90-plus percent of the time, that is the best advice that they ever got, and it was the best, more conservative-based treatment options that they had because they get back to things that they thought were never going to happen, and they do it without the risk of surgery.

Dr. Andy Galpin

All right. Love it. Let's get to step number two. First thing you said is one to two minutes of foam rolling of the quads, hunting for a place of pain and then oscillating on that spot.

Dr. John Rusin

Mm-hmm.

Dr. Andy Galpin

Not because we're breaking up any tissue per se, but because we're trying to tone the nervous system down to relax, to let go, so that we can get into steps two through six.

Dr. John Rusin

Yep.

Dr. Andy Galpin

What's step number two?

Dr. John Rusin

It is going to be stretching.

Dr. Andy Galpin

Ah.

Dr. John Rusin

And everyone hears, "Stretching? Stretching in the warm-up?"

Dr. Andy Galpin

Yeah.

Dr. John Rusin

"But that is going to take down your power."

Dr. Andy Galpin

Yeah.

Dr. John Rusin

"That is, you're not going to be strong. You're not going to be able to move serious weight, bro."

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And it's like stretching in a different way. So, we are still trying to move out into an end range of motion. For this example, we are still going to try to stretch the hip flexors. Because we just did the soft tissue work on the hip flexors, we're following it up with a stretch. So, we'll use the most common example, a half-kneeling hip flexor stretch. So, we are moving down into the half-kneeling position with the side that we have as our focus point in the down position, so that will be on your kneeling knee. And then we will be moving our body weight forward to find an authentic end range of motion. What's authentic versus end range? Authentic means that we still have the capacity to keep our spine in a neutral position, to keep our pelvis underneath us to the point where we're not dumping anteriorly or posteriorly or rotating unilaterally, and we have the ability to have our feet in a grounded position on the floor.

Dr. John Rusin

We are moving forward, we're finding that end range of motion, and then we are moving in and

out of that end range of motion for about an inch, slow, smooth oscillations. So, we call this the dynamic oscillatory stretch. And this allows us to sit at that end range to get more and more creep-based awareness of getting a tiny bit more each and every creep-based oscillation, and being able to then breathe deep into that stretch to be able to expand the diaphragm and put more central pressure down over some of those structures as well from a central lines perspective. So, we're going to sit there, we're going to oscillate anywhere from 45 to 60 seconds per side, and we are going to continue to breathe deep into that position. But what we can do is actually go through that oscillation and then sit maybe for 15 or 20 seconds as a final end range. But it's still going to be authentic. It's not going to be something where you're contorting your back into extension.

Dr. John Rusin

You're rotating your hips one way, and then you're just hoping and praying that you can feel the stretch.

Dr. Andy Galpin

Mm.

Dr. John Rusin

We're not going after the feel of the stretch. We're going after the position to be able to expose it into new areas so we can learn what this feels like before we go back into stabilizer.

Dr. Andy Galpin

Okay. Sounds like you're cheating.

Dr. Andy Galpin

Not supposed to be bouncing when I'm stretching, doctor.

Dr. John Rusin

Big difference between bouncing and a controlled movement. So, if you can see my hand right now, it's going to be slow, controlled, very low amplitude of movement. There's no reactive bouncing. There's no reactive compensation, because that is heightening the nervous system. We are still trying to down-regulate the nervous system in this phase. And when you can think slow and smooth and coordinating the breath cycle, a little bit goes a long way. So, we actually centrate the shoulders, we centrate the hips by putting a little tension through the glutes, and the adductors kind of co-contracting and squeezing, and then that allows us to stay authentic and not compensate at the pelvis or the spine. And this tiny bit of tension, so you're thinking like max tension, bring it down to like 1% to 2% of max tension. It's just enough in order to structurally keep us where we want, so we can have a targeted stretch through the oscillation on the range of motion.

Dr. John Rusin

That is authentic because that's the range of motion we're about to train.

Dr. Andy Galpin

What do you mean I have to turn on my shoulders and my core when I'm stretching my quad?
What does that specifically mean?

Dr. John Rusin

So, every time that you move meaningfully, meaning like in a gym-based scenario. I'm not talking about like moving playing soccer. But in a gym setting, we want to be able to manage the pillar complex. So, the pillar complex is defined by three unique areas that synergize together. The shoulder complex, the hip complex, and also the spinal complex. So, we're utilizing tension throughout the chain in order to essentially have more stable tension throughout the entire pillar, so then we can put a more acute exposure of a stretch with something that would look like nothing but feel like the craziest stretch that you ever had-

Dr. Andy Galpin

Yep

Dr. John Rusin

... even though it's something that doesn't look sexy or doesn't look like somebody that is a contortionist on Instagram.

Dr. Andy Galpin

So, you're not grunting, you're not locking down, you're getting just mild amount. And where in my shoulders when you say that, like I'm thinking Am I lifting my arms up? Am I pulling them...?
What do you mean contracting the glutes?

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Tell me more detail of where I should be squeezing.

Dr. John Rusin

Yeah. So, we like co-contraction. So, co-contractions around some of the big splane key musculature that encapsulate the shoulder and also encapsulate the hip. So, for the shoulder specifically, our biggest key muscle groups are going to be the pectoralis group and also the lats. Lats are the largest splane muscle in the human body that have the most amount of surface area. Both of these things are internal rotators. So, you think about co-contraction, so squeezing the pecs and the lats together. That'll cause the shoulder to depress, internally rotate, and actually stack the scapula on the backside of the thoracic cage in such a point where we find

something called shoulder centration. Shoulder centration is a deep line of structural stability at the shoulder, which is a ball and socket-based joint.

Dr. Andy Galpin

Mm-hmm.

Dr. John Rusin

So, we have basically perfect orientation specific to the person based on the external stress and the external tension that we can place upon it. So, you co-contraction pecs, lats together, and you're able to actually get this shoulder into a position where this is all strong and stable throughout the entire upper quadrant. So, we don't position somebody here.

Dr. Andy Galpin

I see.

Dr. John Rusin

We allow them to feel it by generating their own tension, which then leads to torque, and we can amplify it by just a little bit of tension through the hands from irradiation down to upstream.

Dr. Andy Galpin

Yeah. I think one of the things that you're noticing, I am certainly noticing, I hope you're picking it up at home is, this stuff is incredibly detailed, but actually quite simple. If I had to summarize everything you've been talking about so far, it's just intention.

Dr. John Rusin

Yes.

Dr. Andy Galpin

It's paying attention to what you're doing and saying you can waste 15 minutes checking your phone while you're on the elliptical and call that your warmup, or you could spend that exact amount of time, potentially less, and not only be warmed up, but you've done your corrective work, you've reduced pain, you've increased range of motion. You've done so many more things in less time, which is the mind trip is I'm trying to think about somebody listening and going, "Oh my God, this doesn't apply to me because I don't have back pain." It's like you're missing the entire point here. What you're looking at is a system that allows you to go, "How do I get so many more things that are causing problems and get them out of the way in way less time?" All you have to do is focus just a tiny bit of attention.

Dr. John Rusin

I learned this lesson the hard way because you know this. When you're in professional sports-

Dr. Andy Galpin

Oh, sure

Dr. John Rusin

... when you're managing an athlete, you only have a very fine duration of time to be able to manage them per week. Sometimes you're only 45, 50 minutes per week.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Not per workout, per week. So, every single piece of the puzzle, of the programming puzzle that you put into play has to have a reason why, and it has to double and triple down on the effects that it can have long-term. So essentially, you need to do the things that will make them feel good then. You need to develop the skills that will then translate for sustainability, and you have to have all those things lead to them being more resilient and building capacity to stay healthy. And you're like, "How the heck am I supposed to do that in 45 to 55 minutes per week?" And these are some of the conversations and some of the challenges that even the highest-end strength coaches in the world deal with with their athletes in professional sports and also Olympic sports. The big misconception out there is that professional athletes have more time than everyone else-

Dr. Andy Galpin

Oh, sure

Dr. John Rusin

... to train. I can definitively say-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... that they have less time to train.

Dr. Andy Galpin

Yeah, yeah.

Dr. John Rusin

Especially when we're in preseason, when we're in in-season-

Dr. Andy Galpin

Oh

Dr. John Rusin

... or even in the first couple of weeks of off-season. So, probably you have a window of six to eight weeks of more serious training where you can get a couple hours per week.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Everything else is being able to have huge amounts of impact in very little amounts of time, where you have to try to teach and restore the principles of pain-free performance in a very calculated way so that you can then couple that over months or years at a time.

Dr. Andy Galpin

Today's episode is sponsored by David. David makes protein bars unlike any I have ever encountered. They have an amazing 28 grams of protein, only 150 calories, and zero grams of sugar. That's right, 28 grams of protein, and 75% of its calories come from that protein. This is 50% higher than the next closest protein bar. Honestly, it's the best-tasting bar I've ever had in my life by a mile. And their newest bar, the David Bronze bar, tastes incredible as well. While I often talk about the importance of getting one gram of protein per pound of body weight for things like muscle health and recovery and the promotion of lean body mass and satiety, the reality of that is, for most people, getting that one gram of protein per pound of body weight is really challenging. However, David makes that easy. Their bars taste incredible. The Gold bar is packed with 28 grams of protein with just 150 calories, and the Bronze bar has 20 grams of protein, also with just 150 calories.

Dr. Andy Galpin

I eat one almost every single day and always have two or three with me in my backpack when I'm traveling, and I literally mean always. It probably sounds funny, but I eat them as dessert all the time. When you try them, you'll know exactly what I mean. If you're interested in trying these bars for yourself, you can go to davidprotein.com/perform. Again, that's davidprotein.com/perform. Great. Hit those quads with my foam roller. I did my oscillation stretch-

Dr. John Rusin

Yep

Dr. Andy Galpin

... when I'm in good position. You walked us through how to lock down the shoulders in the proper position, but I didn't allow you, I cut you off and changed direction before you walked us through how to do that with your core and hips.

Dr. John Rusin

Yeah. So, once we go co-contraction of the pecs and lats and put a little bit of irradiation through the hands, we go right down to the hips secondarily. So, the cool thing about the hips is that it's another ball and socket-based joint, meaning that it has maximal degrees of freedom. It can basically work in any different degree of range of motion Extension, flexion, internal, external rotation, abduction, adduction, all of it is at its disposal. So all of a sudden you have four quads and you have seven adductors and you got these four hamstrings and you got this ass on the backside of it and you're like, "What am I supposed to do here?" Go back to the lines of tension dictating your position. So I really love the adductors and the glutes co-contracting because these are not linear muscles. These are steep splay muscles that can coordinate around oblique lines of tension. So we have the adductor group and the glutes co-contract, and that creates a torquing effect that actually puts us in a stable and strong position, in a centrated position at the hips.

Dr. John Rusin

And the cool thing about centration is that when the big muscles like the glutes and the adductors bring you into centration, that means that the deeper, more intrinsic-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... stabilizers are actually at an optimal length tension relationship to do their functional job, which is to simply keep you in a centrated position at that ball and socket. So things go really well from an overall perspective of the big muscles going down to the small intrinsic stabilizers, and then right down to the ball and socket, the bone on the bone. Structural integrity at that position, it leads to all good things happening neuromuscularly.

Dr. Andy Galpin

When you say adductors and glutes co-contracting, does that mean my left knee is on the ground, I'm squeezing my groin on both sides or on my right side or my left side and then-

Dr. John Rusin

Correct

Dr. Andy Galpin

... I'm squeezing both glute muscles?

Dr. John Rusin

Yes. So you create, because you're in an asymmetrical lower body position in half kneel, you have a scissoring effect that happens. So the adductors will actually scissor together, the glutes will actually scissor together as well, and there's not going to be a whole lot of relative motion

happening.

Dr. Andy Galpin

Got it. Yeah.

Dr. John Rusin

This is going to be really predicated on creating tension out of an isometric. And remember, we're creating tension, we're scaling down the tension, just enough tension remaining in the system to keep structural integrity of the movement.

Dr. Andy Galpin

So all of it is just slightly contracted enough. Is there anything else to say on the core part of it? Or is the assumption if I get my shoulders and my hips locked in, core will take care of itself?

Dr. John Rusin

Yeah. So this is a big misconception, right? People are like, "Oh, I need a stronger core. I need a more stable core. Core", and they forget about the most mobile joints in the body above and below it.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

You have the shoulders and the hips. You need to manage those first because then all of a sudden when you have stability above and below, you can use things like the breath and being able to extend 360 degrees with bringing air into your system with the expansion of the diaphragm and being able to actually just bring enough air in where it kind of really locks the canister down. So without the management of the shoulders and the core, putting tension into your core is fairly useless. But when you can put tension into your core while managing those ball and sockets above and below, a very little bit goes a long way in terms of actually bracing the core. And it feels a lot more intuitive for people once they're actually managing above and below to feel what's going on and to grade it down to a low level of tension where it's not restricting their overall breath cycle or the range of motion that they're able to display.

Dr. Andy Galpin

That's step two. Anything else on that, or do we go to step three now, assuming we did that for, same thing, a minute or two, correct? Per side?

Dr. John Rusin

Minute or two per side. You can work as soon as you feel like okay. Oh, I got that. You can move on. The key is that you don't want to overemphasize this. The goal of all this stuff is to feel good to get to training. So don't spend too much time here because the overall goal is to actually do

the work.

Dr. Andy Galpin

And what is step three?

Dr. John Rusin

Step three is corrective exercises.

Dr. Andy Galpin

All right.

Dr. John Rusin

So you're thinking about being able to have a play-based exposure to try to learn something. I call it the "aha" moment. You want to do a movement-based drill that has a lot of motor control and skill capacity to it. So you're actually exploring movement, and the whole goal is not to count sets or reps or to try to micromanage every tiny little movement. You're giving the freedom to actually try to find something new that you haven't felt before. So for this example, we'll use another very common and traditional corrective exercise, probably the most famous corrective exercise, which is the bird dog.

Dr. Andy Galpin

Oh, yeah. Sure.

Dr. John Rusin

Call it the quadraped arm leg opposites. So essentially what we're doing is trying to restore hip extension plus overhead shoulder mobility and have the cross linkage of the shoulder and the hip working together. And in this exact example, we've foam rolled the quads, we've then gone in and hip flexor stretched the quads, and then we've gone in and want to display hip extension actively.

Dr. Andy Galpin

Hmm.

Dr. John Rusin

And we want to be able to find the connection point between the pillar and also go through that range of motion actively.

Dr. Andy Galpin

That one seems pretty intuitive, right?

Dr. John Rusin

It is.

Dr. Andy Galpin

You can do a variety of different, and this could be anything from you gave the bird dog, but this could presumably be a kettlebell squat. It could be a dumbbell, barbell. Really could be anything. It doesn't have to be light, soft, easy. You're not going to be training at this point, but you're doing something intentional from a movement pattern perspective. Is that fair?

Dr. John Rusin

It is, and the two predominant places that we will put more emphasis on in corrective exercise is going to be the thoracic spine and the shoulder girdle working asymmetrically.

Dr. Andy Galpin

Mm. Mm. Yeah.

Dr. John Rusin

Or the hips and the lumbopelvic complex working asymmetrically.

Dr. Andy Galpin

Yeah. That's your right arm, left leg asymmetrically is what you're talking about in the bird dog example.

Dr. John Rusin

Correct.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

So any corrective exercise, we want to give enough movement exposure where you have kind of like a test retest. So you kind of do something on the right, and then you're going to feel a couple reps how it feels on the left, and usually you have one more affected side than the other. So you can always kind of test and retest. "Oh, that felt good. Oh, that matched this and that." And you're able to display ranges of motion, hopefully, that you got into. So if you opened up hip extension, we want to use a corrective exercise in this example that would explore hip extension through a more active lens.

Dr. Andy Galpin

We've done that. Now step four.

Dr. John Rusin

Step four is activation. So we want to restabilize that newfound range of motion. In this example, we're really focusing in on hip extension again. This is easy now. Now this kind of feels like training, right? So we just got through kind of the fluffy stuff. I don't mean to say fluffy like it's not important, but it more feels like physical therapy than it does like training. So we start to hit that

bridge where it's like, okay, we're going to start to on-ramp the nervous system a little bit here. So we just did something that maybe has a vital metric increase with the corrective exercise. You're definitely going to feel some sort of stimulus with an activation drill, because you're going to put a whole lot more mind-muscle movement connection into this. You're going to generate way more tension. You're going to be doing sets and reps, and in this example, we'll use something like the hip thrust.

Dr. John Rusin

Mm. Amazing movement for glute activation, for global three-dimensional glute activation. So you're using the hip thrust because we want to move actively into hip extension, and we gained that full hip extension in the three previous phases, and now it's time to flex those glutes as hard as you possibly can. Abduction, external rotation, hip extension, and we want to cue in on posterior pelvic tilting. Hit all four key muscular actions of the glutes all in one, and that is what leads to the highest amounts of activation. So we think about training three to five sets of three to five reps. So we don't want to absolutely annihilate the glutes here, but what we want to do is have full range of motion. We want to have training from a stretch all the way up to a heavy flex, accentuated eccentrics, and probably a one-second flex at the top where we can actually amplify the amount of tension in that limited amount of volume.

Dr. John Rusin

If you've maybe glanced over this or you're a little bit confused and you're thinking, "Why is he so worried about the glutes? I thought we were working on the quads?" First exercise you went to is a glute exercise here, not a quad exercise. Yeah, so you alluded to it before. You said, "Is it a mobility or a stability thing? Is it tension or tightness or a range of motion?" Where something we want to mobilize the front side, for example, we want to work on hip mobility moving into extension, you need to actually look at the backside of the body, the posterior chain, as the key driver of that stability factor. Right. So while we open up the quads on the front side, we have actually restored its ability to display a range of motion that we need to then restabilize on the backside for this example. So the glutes and the hamstrings are going to be the key driver of tension and stability on the backside of something like hip mobility.

Dr. John Rusin

So thinking about being able to target the glutes specifically, you're no longer going to go back up into the hip flexion and actively train hip flexion. Technically, you could do that, but more times than not, you're going to have a general principle, especially going back into the postural deficits that we were talking about previously, of opening up the front side of the body, restabilizing the backside of the body, and being able to restore neutral positions. The opposite approach would be to jump straight into hip thrust and hip extension work, having skipped the part where you foam rolled the quads- Correct ... having skipped the stretching, having skipped the other pieces

there, and you're probably now not going to be seeing the same level of hip extension. I mean, if I lost you with the jargon a little bit there, if your quads are tight, we'll just call it- Yeah ... this is going to stop your hips from able to extend all the way up, which is why you open those up first to be able to let the glutes actually get all the way up and get through their ranges.

Dr. John Rusin

So potentially that, but also potentially that your body's going to find ways to compensate through that perceived full range of motion at the hip extension, and it's going to most likely compensate at the pelvis or the lumbopelvic junction, and that will actually reduce the amount of activation and targeting that we can get at the glutes itself. And hence the low back pain. Exactly. Right. So you're compressing the low back rather than extending the hips through the glutes because the quads lock them down. Exactly. The hip thrust, the glute bridge, those are some of the most highly accessible movements even for people with active lower back pain. Yeah. But only when we facilitate it feeling good and getting into restored ranges of motion without compensatory factors beforehand. Yeah, I appreciate you giving us such a direct example here. I think it's, some part of the concern is people are like, "Again, this is not my issue, so I don't see the value here," and I hope we've established that.

Dr. John Rusin

The benefit of doing this though is it allows you to be super specific with a fake case. And so, I will also extend you some context, Grace, here saying, again, to reiterate, not every back pain means it's because your quads are tight. Correct. A billion other things here, but again, thank you for acting like we have one tangible example to go on here. I'll be honest, though, we see probably six or seven out of 10 chronic lower back pain clients come through and usually lack the same amount of fundamental skills and positions. Nice. As much as I want to say in a clinical lens that everyone's this special little snowflake- Sure ... every tiny little diagnostic- Yeah ... is this miracle cure, it can be in a diagnostic and a rehabilitation realm, in a clinical realm. In a chronic realm, in a subclinical realm, this is where the movement health of human beings, people are looking more and more alike today more than ever because of a lot of the factors in our lifestyle.

Dr. John Rusin

Oh, interesting. Yeah. So we are seeing more commonalities on a very particular avatar within- It's getting more homogeneous. Yeah. Interesting We're seeing this between desk jockeys, professional athletes, youth, active agers. The lifestyle factor is making everyone look a little bit more similar, even though everyone has unique presentations. Yeah, no, I get it. I mean, this is the value of doing it 1,000 times, is it actually- Yeah ... you start to see big global patterns- Right ... on people. That's great. All right. So, you did our hip thrust and you were saying generally you're looking at three to five, three to fives here. You're trying to activate. This is not our training

yet. But you're just trying to activate, I think, is the term, right? Correct. So there is low amounts of volume, high amounts of effort-based intensity- Muscle connection ... but from a traditional perspective of intensity, we're not loading this.

Dr. John Rusin

Activation is a really good time to use body weight-based movements, and then also if you want to put banded accommodating resistance, that's a nice way to amplify something feeling hard, creating a lot of torque and tension in the system, without actually fatiguing the system via external load. You had to make me smile there. I don't know what you just said that just pinged this in my mind, but I was thinking three to five

Dr. Andy Galpin

"Okay, kind of activation over there." Or we could mountain dog it and do six by 100 or something like that.

Dr. John Rusin

That's the exact anecdote and story-

Dr. Andy Galpin

Oh, you had to know-

Dr. John Rusin

... that I use in the textbook.

Dr. Andy Galpin

Oh, okay.

Dr. John Rusin

I did. So I start off the activation chapter by saying, "We are activating, not annihilating." And it shoots to me training with John. And-

Dr. Andy Galpin

Okay, so you knew John.

Dr. John Rusin

Yeah. So we're training, and we're doing face pulls as the primer, and we're doing sets of 100 face pulls. We did five sets of 100 banded face pulls.

Dr. Andy Galpin

And my arms done like this.

Dr. John Rusin

John was a bodybuilder and was very influential coach and stuff, was a really smart guy. Very influential on my career as well, because that was the first high-end bodybuilding coach that

actually cared about pain-free performance.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Gave me a whole lot of opportunities early on in my career-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... and knew very well that the key of building muscle or getting strong or performing at a top rate of any goal-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... was making sure you were healthy.

Dr. Andy Galpin

And you've said this multiple times, but the face pull exercise, folks, you can Google what that means. It's a really good exercise. But-

Dr. John Rusin

Yeah. It is probably the most programmed activation drill for the upper body that we use globally for almost everybody.

Dr. Andy Galpin

Since we're here on this one , again, you heard that correct, folks. Those were sets of 100 that John was quite famous for advocating. I would imagine this put the most insane pump of your life and into your shoulders.

Dr. John Rusin

With the micro band.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Well, how much weight would one need in an exercise where you typically do 5 to 10 pounds

anyways?

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Is there anything interesting to say about the face pull exercise that you like to cue that's different than people typically get to, or do you feel like generally how it's coached is the appropriate way?

Dr. John Rusin

No. I feel the way it's coached is the inappropriate way-

Dr. Andy Galpin

Okay, then

Dr. John Rusin

... for the exact functional goal.

Dr. Andy Galpin

Look what we stumbled upon.

Dr. John Rusin

So what we want to think about doing for the face pull, and why I love it so much, is that it puts the thoracic spine into active extension.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

It puts the shoulders or the humerus into horizontal abduction, external rotation, and it has us globally extending at the head and the neck.

Dr. Andy Galpin

Yeah. If you missed all that jargon, just watch the video. You were doing it perfectly in person, or you can Google it, but go ahead, sorry.

Dr. John Rusin

So that puts us in the position to essentially be the exact opposite of how you would text.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

So you have elevation of the shoulders, internal rotation of the shoulders, flexion of the thoracic

spine, and then also extension of the neck. And this is the position that we're the opposite at when we're actually in the face pull. But the face pull, I really like two different ways. So if you're going to use a traditional selectorized cable stack and use something like a rope or handle attachments, overhand grip to have slight rotation of the hands happening. The cue that I like is overhand grip on the rope, thumbs down to thumbs up.

Dr. Andy Galpin

Got it.

Dr. John Rusin

Slight degrees of internal and external rotation, and accentuating the eccentric from external rotation-

Dr. Andy Galpin

Ah

Dr. John Rusin

... back into internal rotation.

Dr. Andy Galpin

Great.

Dr. John Rusin

Now, the common way that I see face pulls being taught all over the place is this big, huge external rotated moment, and that happens with an underhand grip. So an underhand grip, so you pull back one, two, three, four. I'm allergic to that one. I really don't like it because, one, I don't like breaking up the kinematic chain into multiple steps under load. Second, this is a super weak position into external rotation-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... up here, and it also causes a hyperextension usually happening in compensation at the lower back. So it kind of negates the ability to extend the thoracic spine. And then third, very rarely do we have the rotator cuff picking up from a functional perspective, like keeping centration through internal and external rotation when we're at end range, huge amounts of external. So we end up actually training some different muscles than the whole goal of the exercise itself, which is to remobilize the shoulders into the opposite poor postural positions that we find ourselves in on a daily basis, and we simply lack the ability to have functional transference into shoulder health. I see more people with problems with this one versus benefits with that one. That's why we like overhand, even with the band. Overhand, thumbs down to thumbs up, and the key cue is driving

with the elbows, not bringing the hands to the face.

Dr. John Rusin

We want the shoulder blades to be moving, not the hands to be coming to the face relatively.

Dr. Andy Galpin

Where are they targeting their hands relative to their own face? And what angle of a pull with the band or the cable, whatever you're on, do you prefer?

Dr. John Rusin

Okay, so there are three primary angles from an anchor point's perspective. So if you were relative to your head, that is the first one. That is going to be the most common, where it's going to be a parallel pull relative to your face. That one's going to have equal amounts of upper back and a lot of more retraction and protraction of the shoulder blade. You're going to get mostly posterior delt there and not a whole lot of the lower downward rotators of the intrinsic of the shoulder blade. So that's a good place to start. If you're dealing with postural stress disorders already, if you're already dealing with chronic neck tightness and you're feeling like, "Man, I'm just, like, can't even rotate my head anymore," almost always people are going to do better with a high to low anchor point. Meaning that you're anywhere from a foot to two feet above your head, and then you're going to have that high anchor point pulling down.

Dr. John Rusin

So that is going to allow us to depress the shoulder blades. It's going to allow us to downwardly rotate the shoulder blades, but also kick on different levels of stability from the lats to actually keep us in a centered position at the shoulder. So I'm a huge fan of high to low. Very rarely, probably one out of every 20 people, is in need of a low-

Dr. Andy Galpin

Mm.

Dr. John Rusin

... to high.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

That's the one that I just talked about. We will program it. I'm down for programming anything for a client that needs it, but I would say 80% of people need high to low. Probably 20% of people need it parallel, and maybe a fraction of a percent actually need the big external rotation coming low to high.

Dr. Andy Galpin

So let's just say we're using a band. It's coming at, we'll just call it a 45 degree, but we explained it's not already. And so what you're going to do is reach towards the machine and you're going to grab, we'll just say the rope.

Dr. John Rusin

Mm-hmm.

Dr. Andy Galpin

And your thumbs will be pointed down, which means your hands are rotated inward, so your thumbs can be pointed down. You're going to pull back and your aim point on your hands is your cheeks, your eyeballs, your chin. Where exactly do you like them to aim for?

Dr. John Rusin

None of them.

Dr. Andy Galpin

Tremendous.

Dr. John Rusin

So what we're thinking about is being able to actually rip the hands apart. So you actually want to open up, actively ripping the hands apart on whatever rope or attachment you have, and the key cue is elbows moving back behind the body. The hands will naturally move towards the face.

Dr. Andy Galpin

Yep.

Dr. John Rusin

The hands will naturally move right between the nose and the mouth, and that is going to be the trajectory of the pull. But the key is that we can make it a bicep exercise-

Dr. Andy Galpin

Yes

Dr. John Rusin

... if we're just pulling our hands towards our face. We want the shoulder blades to kick on, and the key cue is having the elbows actually lead the motion, and the hands are just hanging on for the ride.

Dr. Andy Galpin

Understood. And by doing that, your hands will naturally open up. So your thumbs will start to point up.

Dr. John Rusin

Exactly.

Dr. Andy Galpin

Are they finishing vertically?

Dr. John Rusin

No. So you're going to probably-

Dr. Andy Galpin

45 degrees

Dr. John Rusin

... have them pointing down at 30 degrees. So if you're 30 degrees-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... 30 degrees.

Dr. Andy Galpin

Okay.

Dr. John Rusin

So a relative 60 degrees of delta of a range of motion.

Dr. Andy Galpin

Okay. And you made a little bit of a joke there, but if you were to pull your hands all the way to your mouth, one could do so where the distance between your forearm and your biceps close.

Dr. John Rusin

Yes.

Dr. Andy Galpin

But your elbow didn't actually move backwards at all.

Dr. John Rusin

Correct.

Dr. Andy Galpin

Which is the exact point. So you would rather actually see the opposite, where the angle between in the elbow doesn't really change as much, but really you're moving the elbow backwards.

Dr. John Rusin

Yeah. So if you could think about it, like at the end of a good face pull, you should be at about 90 degrees.

Dr. Andy Galpin

90 degrees at the elbow.

Dr. John Rusin

At the elbow bend.

Dr. Andy Galpin

Okay. Tremendous. Well, thank you for that little deviation. Those little things are helpful. But good there. And why that I actually feel like that was important is because you said it was so useful for so many people.

Dr. John Rusin

I don't know if I have a client right now that is not doing face pulls, either in their warm-ups or in their-

Dr. Andy Galpin

Oh

Dr. John Rusin

... actual training sessions.

Dr. Andy Galpin

I see. So you have clearly been bought and paid for by some private equity face pull.

Dr. John Rusin

Big face pull got me.

Dr. Andy Galpin

Illuminati has got you somewhere. Amazing. All right. So we'll cycle back. I know that if someone was like, "I just wanted to know the six phases," just buy the book. You could've got them. My whole point of doing this exercise was actually I knew we were going to uncover so many cool-

Dr. John Rusin

Yeah

Dr. Andy Galpin

... interesting things along the way. So I care not how far in we are at this point. But we walked us through foam rolling and then the oscillation, and then we did our glute activation as our third step, our three sets of five, and then our fourth step was, remind me of step four.

Dr. John Rusin

We missed one. So we did soft tissue work as phase one.

Dr. Andy Galpin

Yep.

Dr. John Rusin

Phase two is stretching. Phase three was the bird dog example-

Dr. Andy Galpin

Ah, bird dog, yeah

Dr. John Rusin

... that we gave for-

Dr. Andy Galpin

Corrected my miss

Dr. John Rusin

... corrective exercise. Phase four was the hip thrust example with the band. That leads us to phase five, and now it gets super simple. Phase five literally looks like training because it is training. You are picking the primary movement patterns in your program that day. You don't need to pick all the movement patterns, but there's usually one that you're like, "I'm going to get after it today." And that is called a key performance indicator lift of the day. You can define this by being the hardest and heaviest lift of the day. You can think about it as like the apex of your training program. So whatever that one is, we want to make sure that we are practicing that pattern without fatigue on the system, without a whole lot of load on the system, and of course, without any speed on the systems because we want to slow down and actually dominate the movement and grease the groove of the pattern itself.

Dr. Andy Galpin

Is this the dysfunctional movement pattern?

Dr. John Rusin

This would be the one that we're working on, yes.

Dr. Andy Galpin

Yeah, okay. Great.

Dr. John Rusin

Exactly.

Dr. Andy Galpin

Understood.

Dr. John Rusin

So it allows us more time to practice. So what are your options in phase five of movement pattern prep?

Dr. Andy Galpin

Sorry, and is this the first exercise I do in the training, or does it actually matter?

Dr. John Rusin

It could be any of the exercises.

Dr. Andy Galpin

Okay.

Dr. John Rusin

In Pain Free Performance, very rarely is the thing that we load the heaviest and the hardest the first exercise of the day.

Dr. Andy Galpin

Okay.

Dr. John Rusin

So it's just the one that is planned on being the one that we're progressively looking at over time to get stronger or to have higher performance.

Dr. Andy Galpin

Got it. Thank you. It's the one you care the most about for this thing, but it doesn't have to be the first one, per se.

Dr. John Rusin

Correct.

Dr. Andy Galpin

Or it doesn't have to not be, either one.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Okay. Sorry, continue on.

Dr. John Rusin

So it's either going to be a squat, a hinge, a single leg pattern, a push, or a pull at the upper body. And based on whatever that key performance indicator is, you're going to practice one of those patterns. Even if you train other patterns that day, you're going to pick one to practice. So

for the squat, that looks like goblet squats with a light dumbbell or a kettlebell. For the hinge, that's going to look like a single loaded dumbbell or kettlebell in the front side of the body with an RDL. For the lunge, we're going to look at basic ass split squats up and down, usually with body weight. For the push, pushup, for the pull, inverted row. And that is the way that we're actually going to prime those particular patterns at the bottom of the movement pattern pyramids for Pain Free Performance, because those are the ones that have the highest ROI for actually having learning happen across the movement system, not just in that particular movement pattern.

Dr. John Rusin

They're more full body in nature.

Dr. Andy Galpin

What you're trying to do, in my words, please make them yours, is use all that stuff you just did To reinforce a movement skill that's pain-free.

Dr. John Rusin

Exactly.

Dr. Andy Galpin

Got it.

Dr. John Rusin

It all leads to that. So, the only reason you're foam rolling or stretching or doing a corrective or an activation drill is so when you get into actually practicing the pattern, the pattern feels awesome. It gives you the opportunity window to be like, "Ooh, this feels good today." And if it doesn't feel good, you have a couple sets of a couple reps to try to feel it out. Maybe you go slower on the eccentric. Maybe you pause at the bottom aspects of the range of motion and you use some rotation. Maybe you kick on a more explosive concentric to heighten the nervous system. There's many different options when you're practicing the patterns, but what we want to do is just be very apparent on essentially a pre-rehearsal of how that pattern is functioning that day-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... before you ever get max load or max stress on the system.

Dr. Andy Galpin

Are you still a three to five range here for these sets?

Dr. John Rusin

Yes. So, this is three to five sets of three to five reps. So, this is a common question that I get. "Well, why wouldn't you just do 25 reps?" It's not about the reps.

Dr. Andy Galpin

Right.

Dr. John Rusin

It's about the exposure of where your mindset is. Movement mastery mindset is what we're thinking about here. So, you're trying to think and feel and manipulate these positions in a controlled setting in phase five of the warmup, because the last thing that you want to do under a 405 back squat for five is think-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... and feel and cue. You just want to perform. So, this is getting you into the mindset of, hey, things are feeling good. I checked that box, and I'm going into performance, so I can actually think about moving weights from A to B when I get into the actual back squat, and I don't have to worry about A to B here. I'm thinking about every distinct aspect of the range of motion when I'm goblet squatting the 12kg.

Dr. Andy Galpin

Intensity here? Am I trying to go as heavy as I can?

Dr. John Rusin

No, this is very low. So, think about taking anywhere from a 10 to 25-pound dumbbell for a 12kg kettlebell if you are using that load, or even if you're using body weight, making sure that it is non-fatiguing. So, you're doing something like a pushup. Hey, if five pushups brings you to absolute failure, then you're doing something to make it easier from a loadings perspective. You're elevating the hands up on a box or a bar in a rack or a Smith machine or something like that. You're practicing the pattern. Same thing could be said from an inverted row. Whether you're using a suspension trainer like a TRX or you have a bar in the rack, you're using the body to manipulate gravity as your load. So, making sure that you're practicing the pattern, never in the presence of fatigue or failure.

Dr. Andy Galpin

So, how do we actually move this learned new pattern and system into a spot that I could actually use it without having to go, okay, foot here, turn this on, breathe, hold there? That's where we want to get to. We want to get to the spot where assumedly all this work is being done, so it'll actually change the way I'm sitting in my chair. Going back to the beginning of the

conversation-

Dr. John Rusin

Mm-hmm

Dr. Andy Galpin

... this was supposed to be something that you told me, John. This is what you'll do to get your posture actually corrected, in that example, the rest of the day. How do I get that gap closed?

Dr. John Rusin

So, in phase five, the thinking, the feeling, the manipulation of position, those are internal-focused cues. When the goal is trying to improve the motor pattern itself, internal cuing is what we're thinking about. So, an internal cue is, hey, I need to double down on that tension in the shoulder. You know what? I need to be able to kick on my glutes a little bit more right at the bottom aspect of that squat in order to sit down into the ass to grass position. Those are the things that you tend to think about when you're trying to restore the pattern. Those are the polar opposite of what you're trying to think about when you're actually loading in the workout itself. So, you automatically go into external cues. When performance is the goal, you're using more of an A to B external cue. So, instead of thinking about knee position and shoulder position on a goblet squat, you're like, "All right.

Dr. John Rusin

I'm going to move this bar from the bottom of the squat-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... through the fucking ceiling." That is what you're thinking about. So, they're two totally different things inside of the same pattern itself. But the more that you start to internally cue, the more automatically they become your autopilot of your movement because of the repetition, because of the compounding exposure that you have doing that and being able to tinker, and then transferring it back into external cuing for performance. So, the more intricate that you can get and the more deep level of mastery that you can have in your pattern when you're thinking and feeling about all the components, the more potential that you have to actually perform when the task becomes a lot simpler. A to B, through the ceiling. That's a performance-based cue. So, automatically, we want to ingrain the reliable autopilot. The reliable autopilot means that all the time that you spent thinking and feeling and being able to perfect your movement, it'll automatically show up more when you actually get into a performance realm or a performance in your training itself, or even outside of the gym.

Dr. John Rusin

So, the more exposure we get here, the more likelihood it has the ability to transfer back to where we need it.

Dr. Andy Galpin

It becomes automated.

Dr. John Rusin

Completely automated. But it only happens with strategic graded exposures.

Dr. Andy Galpin

Totally.

Dr. John Rusin

Graded exposures that can take a stage progression step by step to never push somebody past what they are capable of doing that day, and never to underload somebody to the point where they're frustrated with the lack of progress. So, that is the exact way that we teach human movement at Pain-Free Performance, is that we want to expose, we want to give enough volume and enough compounding exposure to something that when we put that next progression in, it is guaranteed that they're ready and they're confident to be able to almost do it automatically. And that's because there is a predictable way to teach human movement and all of the patterns. That is exactly what we do, and sometimes it's not the sexiest thing to say, is that we're going to take somebody from busted down and broken and burned out-

Dr. Andy Galpin

Mm

Dr. John Rusin

... to being able to re-expose them to get to a higher echelon to their performance or to get out of pain. But that progression is very, very similar to a vast majority of people out there.

Dr. Andy Galpin

Today's episode is sponsored by Eight Sleep. Eight Sleep makes smart mattress covers with cooling, heating, sleep tracking, and more. I've personally been sleeping on an Eight Sleep mattress for more than three years now, and it's absolutely glorious. I love it so much that I hate traveling away from home because I can't sleep on my Eight Sleep Pod 5. As you'll hear me talk about endlessly on this podcast, there's really nothing you can do that makes more of an impact on your health and performance than getting a great night of sleep. And getting great sleep requires having your body temperature drop a couple of degrees at night, and that's hard to do on your own. The Eight Sleep has been a game changer for me because I run hot at night, and/or as my wife calls it, I'm a furnace. If I don't have something like an Eight Sleep helping me cool down, I'll wake up in the middle of the night overheating and not feeling great.

Dr. Andy Galpin

This is something I've also found in many people that I coach, especially those who are really physically active. The Pod 5 is the latest generation of the Eight Sleep mattress covers, and it can go on any mattress, heats or cools each side of the bed from 55 to 110 degrees Fahrenheit, and provides high-fidelity sleep tracking. If you'd like to try Eight Sleep, go to eightsleep.com/perform and use the code PERFORM to save up to \$350 off your Pod 5 Ultra. You get 30 days to try it at home and return it if you don't love it. But I'm confident that you will. I certainly love mine and would never consider returning it. Eight Sleep currently ships to the US, Canada, the UK, and select countries in the EU, and even Australia. Again, that's eightsleep.com/perform, and use the code PERFORM to save up to \$350. When is it okay to go heavy for the sake of movement in terms of learning, progression? I feel like when we typically think about corrective exercises and pain-free, the association there is going to be light, it's going to be stretching, it's going to be body weight, three sets of five.

Dr. Andy Galpin

Where does heavy come into the equation?

Dr. John Rusin

Heavy comes in almost automatically after the six-phase warm-up is completed. That's called strength training. Strength training is awesome for injury prevention, for injury risk mitigation, to be healthy for life. I don't think anything compares to strength training. I think it is the OG and the forever number one that people need to be doing. But you need to go hard, you need to go heavy, you need to put stress on the system, and that's what happens in the training session itself. So, the six-phase warm-up is all a means to get to the actual goal, which is to place stress on the system, to place volume and intensity and strategic ways to program in such a way that you're not going to have the repercussions of pain or injuries or burnout while doing it. You have done everything in your possible realm to be able to give yourself a good chance to not only get a positive, adaptable training effect, but not actually burn out in the process or not break down under load.

Dr. John Rusin

That's number one in the gym. We can't not only not cause pain or injuries in the gym, everybody should be able to do that. It's the effects that happen in the 24, the 48, the 72 hours after, the weeks or months or years, the compounding factor of what we're doing in the gym. We're just trying to get in the best possible position so we can actually make this thing that can serve somebody's life for life.

Dr. Andy Galpin

Stage six.

Dr. John Rusin

Stage six is the best. We are central nervous system stimulation. That means that we get to hone in on athletic movements, we get to look at rotational movements, we get to move faster than the way that we're already moving, and this is the way that we place in skipping, jacks, jumps, medicine ball throws, bounds, landmine, anything that has more of a ballistic intent behind it, and that is what can really up-amplify somebody's central nervous system to bring them from, "Hey, I'm feeling pretty good" to like, "Yo, let's go. I'm about to run through the brick wall right now" because we've done everything in our power to have the contrast between trying to train speed to prepare for strength. And that is really why we're looking at phase six as the neurological amplifier, so we can actually play on that strength-speed continuum.

Dr. Andy Galpin

Really, really helpful. Thank you for walking us through the warm-up.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

And to reiterate for a couple of times now, that little eight to 12-minute system can be done every day.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Probably should be done every day. You gave us an example of maybe doing multiple different variations throughout the week. If I have multiple, my shoulder hurts, and my knee hurts. Okay, great. Presumably, if you have one area that you care most about, you can do the same one every day.

Dr. John Rusin

Mm-hmm. If I can tease everybody, it's like as much as we just talked about the six-phase warm-up and all its dynamic capabilities for being individualized, you could just grab the textbook, and you can go through 100 different protocols for every pain site on the body, and also every movement limitation or dysfunction. And not only go through those 100 examples of every linchpin, but we busted our asses to make everything QR-able. So, you hit it with a QR-

Dr. Andy Galpin

Oh, sure, yeah

Dr. John Rusin

... with your phone, it brings you right to the program, and you just follow plug and play, and you

could be doing a shoulder mobility linchpin on one day, a hip stability linchpin on another day, and a global spinal mobility linchpin on another day.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

You can just follow along, and it is super easy and effective, and it's me actually doing all the exercises the way I want you to do them.

Dr. Andy Galpin

Yeah, you were telling me about what went into filming all that.

Dr. John Rusin

That broke me down in ways that I will never get back.

Dr. Andy Galpin

Fair enough.

Dr. John Rusin

Mentally, not physically.

Dr. Andy Galpin

There's a couple of points I wanted to go back on. One of them is bracing.

Dr. John Rusin

Mm.

Dr. Andy Galpin

So, outside of the example we went in, just globally, what have you found to be more effective with teaching that? If you want to contrast that to our traditional balsa or any other strategies, and this doesn't have to be core exclusive. But just how do you think about bracing.

Dr. John Rusin

It's the first thing that we teach a client before we even start a workout, because I do think it is that important in terms of not only their injury risk mitigation factors, but also their potential to be strong and stable while training. So we train the pillar, we teach the pillar, and that is our first line of tension and stability for actual bracing. Now, we went over it in the example of the half-kneeling hip flexor stretch.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And it's very simple and it's very similar to that example. But what we're looking at is the shoulders, the hips, and the core to co-contract, to cross link tension and stability, and then add in factors of irradiation from not only the hands, but also the feet and ground contact. So we think about teaching that as your first ability to even feel what it is to, quote unquote, "get tight." Many people have no idea what it is to get tight, and it's not just a regional thing. It's not like, "Okay, somebody's going to punch me in the stomach, get my stomach tight." It's about global tension throughout your entire movement system in order to facilitate control over all aspects, and then move. So this is the first thing that happens. So the co-contraction happens at the shoulders and the hips, and then through the core, and then adding irradiation to the hands, and then to the feet in that exact order.

Dr. Andy Galpin

What about belts?

Dr. John Rusin

Belting is not something that I use personally. It is something that I've used a lot in the past, but it is something that I don't recommend somebody using unless you're a competitive barbell athlete. That means that you're power lifting, that you're doing CrossFit, and arguably, if you're doing some sort of aesthetic sport where you're pushing a huge amount of intensity and volume simultaneously.

Dr. Andy Galpin

Olympic weightlifting.

Dr. John Rusin

Olympic weightlifting, of course. Yes.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

That is the truest of barbell sports.

Dr. Andy Galpin

What's the rationale, generally not recommending it to most people unless you're competing in a sport that requires that thing? Why not?

Dr. John Rusin

So in my space of pain-free performance, the number one reason that somebody would use a belt is to try to use it as a crutch to mask an injury or to mask disuse of the ability to create tension, torque, to brace itself. So they just hope and pray that it keeps them healthy while they

hoist with poor form and no technique, and that is not something that we're necessarily interested in doing. So I have no problem with belted training and lifting as soon as somebody has the capacity to brace without one. If you don't have the capacity to actually dominate your own body, creating your torque and stability, then that becomes a crutch. If you do have that ability, it becomes a performance enhancer in those specific areas.

Dr. Andy Galpin

I think if you asked everyone from professional athletes to competitive lifters, "What do you think about good form?" They would all go, "Yeah, got to have it, right?" What does good form mean?

Dr. John Rusin

Good form is super subjective, right? Good form is what we were taught in school. No, it's not. We were taught in school that there was an automatic right way to do everything. Here's how you barbell back squat. Here's how you conventional deadlift off the ground with the barbell. There is one right way to do everything. And there are education systems out there that still perpetuate this idea today. But good form or proper form, or quote unquote, "perfect form" is relative to two factors. It's relative to who you are, your body shape, your size, your limb lengths, your anthropometry, your injury history, and it's also due to what your actual goal is in the gym. If your goal is to do building muscle versus getting as strong as possible in specific competition positions, then that goes into play as well. So there's no universal perfect form for everybody. But just calling it what it is, there is better form for somebody than another form for another.

Dr. John Rusin

So there's this idea that is out there today that form doesn't matter at all. And then there's this other idea that is like form is all that matters, and if you break one degree of spinal flexion in a deadlift, then your back's going to explode, and you're going to throw discs through the window behind you. Neither are correct. We live in the middle here. We want to be able to individualize and optimize somebody's form and technique for their specific body, knowing very well if it looks good, if it feels good, most likely it's going to scale up in terms of their functional abilities. But if something breaks our lines of what good form is or our core criteria, that is something that in a screening protocol at Pain-Free Performance, we got to know why they're breaking that form. And if they don't have the ability to right it with a coach, being able to cue it correctly or put them into base positions or exercise selections that allow them to actually build up better form, then we need to actually know the deficits of why somebody is unable to actually move optimally for their body.

Dr. Andy Galpin

Three or four years ago, I sat in that exact chair, and I made the comment that you probably don't want to do a really heavy deadlift with a rounded spine.

Dr. Andy Galpin

Which I thought was a fairly safe thing to say.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

And, to this day, perhaps the most hate and vitriol I've ever received in my life was because of that comment. So much so, I got literal threats from various physical therapy and otherwise communities about that, and I was like, "Wow, that's probably the least controversial thing I think I've ever said." But apparently, it was the most.

Dr. John Rusin

Yes. I have been in that exact situation for the last 15 years. I think that in 2013, when I started writing for T Nation and started talking about good form, especially when it came to squat, bench, and deadlift, it wasn't the people that you thought was going to come after you in terms of trying to optimize form for a specific body type. It was the people that looked like they didn't lift. It was a whole new realm of person-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... that I didn't know existed before actually being pushed into the setting, which is this heavy, extremist pain scieners. But it's all based on lack of context. You say something like, "Hey, don't deadlift with a huge amount of rounding in your lower back," and it seems like common sense to us. But sometimes you have to actually look at why that might be a controversial statement, even though it seems, again, like common sense. We've learned that there is no perfect form for everybody, but there is better form that has key criteria to it. So when we screen something out, we want to look at two key factors right away for almost everybody. One, can we keep, gain, and maintain the spine in a neutral zone? Not perfectly neutral. The spine is not straight. Can we maintain a neutral zone through all aspects of the movement pattern? So that's number one criteria. Number two is do we have marked asymmetrical lack of rotational stability, meaning that do we have marked rotational lags where we have things like knees buckling, we have things like shoulders shifting, things that, again, are common sense.

Dr. Andy Galpin

Asymmetry where there shouldn't be asymmetry.

Dr. John Rusin

Correct. So relative right to left. So say taking something like a split squat, your split squat on the right would look markedly different than the split squat on the left because on the right, your

knee caved in every time upon 45 degrees of hip flexion, something like that. And those are the two key criteria that we look at, and we're like, "Hey, if we have a spine neutral zone that is maintained, awesome. If your rotation looks about the same right to left, awesome. Let's go train." Because those two key factors give me, as a coach, a huge amount of confidence in me putting stress on the system and being safe with it.

Dr. Andy Galpin

Is it reasonably fair to say, again, on aggregate here, as always, that if someone is doing a movement pattern and they're not in pain, as long as it's not extreme, you're probably okay with it? In other words, kind of what I'm asking is, how do you define what that zone is in the case of the spine? So someone goes, "Okay, I'm a little bit larger zone than the next person. I got no back pain. I've never had back pain." Are you good with it, or do we still want to put some kind of restrictions on it?

Dr. John Rusin

The zone of neutrality is dynamic. It is not static, and it's not only based on mechanical variables. You think about the zone of neutrality as essentially where you can stay safe moving your spine or any other joint, for that example, through different degrees of freedom. So you think about a zone of neutrality being based on, one, the load on the system. The heavier the load, the more narrow that zone becomes.

Dr. Andy Galpin

Super real. Yeah.

Dr. John Rusin

The lighter the load, the more wide that zone becomes. That's why you can be strong and safe in a yoga pose because you have body weight versus a 700-pound deadlift in exactly that same pattern, but different exposures to load. So load's the first one. The next one is speed. The faster you move, the smaller your zone of neutrality gets. The slower you move, the more time that you have to actually compensate in a positive way, the zone expands. But then it gets interesting. You're like, "Okay, what about your recoverable zones? What was your sleep like the night before that lift the next morning?" That is a key predictor on the way the zone either becomes smaller or bigger. What's your nutritional status look like? What was your stress coming into today? What was the novelty of the pattern that you're training in? Are you training it for the first time or the 10,000th time? What is your preparation?

Dr. John Rusin

Did you skip the warmup? Did you actually go through a six-phase warmup and you're feeling good that day? What is your ability to be on week one of a training cycle versus week 12 of a training cycle? What is the overall central fatigue in the system? So you think about all those key

factors, it comes down to one thing. We want to be able to have graded exposure into new ranges of motion and new zones that break that cardinal perfect range of motion, meaning that we don't want to overload somebody too quick or too fast with too novel of a position or with too much volume. And if you can manage all four of those variables, then almost always, you can get somebody to the point with, if they're patient with their training, you can open up somebody to have a world record deadlift, and it looks like, yeah, they are deadlifting with a rounded back, but they were patient enough to actually open up their neutral zone to the point where it was not something that was going to put them at risk for pain or catastrophic injury.

Dr. John Rusin

But everyone wants to point at that person, the 1,100-pound deadlift with a rounded thoracic spine and say, "Hey, he did it." Therefore, the guy that can't deadlift at all at 135, that looks like he's a dog taking a shit on the sidewalk, he's going to stay safe the exact same way he is. These are two different people with two different experience levels and amounts of exposure. So it's not a black-and-white issue, but very rarely when you start to actually break down what this dynamic neutral zone looks like, it's very hard to argue with the fact that a more prepared person, a more experienced person, a more patient person that has progressive overload, maybe 8 to 10% per week or per month with a more linear-based approach to exposure, is going to be safer. They just are. And going back to your example, where we see the most lower back injuries specific on hip hinge variations like the deadlift is rapid, forced, eccentric flexion upon concentric-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... raising of the lift.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And it means you're down at the deadlift, you get it up off the ground two to three inches, you're pulling, pulling, pulling. All of a sudden, something happens and you lose tension, you lose stability. And everything buckles on you. That is where people have problems. They also have problems there upon the change of direction phase in the squat. So they're lowering it down.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Boom, boom. The butt wink, the catastrophic butt wink. Not a huge believer in the butt wink being inherently dangerous, but we also don't coach it. So that is that same mechanism of rapid

force eccentric flexion on the lower lumbar spine, that I'm just not interested in putting that type of risk onto my clients or my athletes. So we really avoid that at all costs, because even with graded exposure, a lot of lack of stability rapidly is never going to lead to really good outcomes in terms of long-term health and being able to stay healthy.

Dr. Andy Galpin

Yeah. You see the same thing in the biceps. You see the same thing in the shoulders on a bench press. Like, the transition is going to do with that rapid eccentric.

Dr. John Rusin

So this is another interesting one, because we get hammered because I don't teach a mixed grip. I don't teach a mixed grip for the deadlift, no matter who you are. And even if you are going to go and compete in it, your off-season as a powerlifter is going to be either with straps or a hook grip or a double overhand.

Dr. Andy Galpin

Oh, sir.

Dr. John Rusin

And the reason that we don't do that-

Dr. Andy Galpin

You just want people to be weak

Dr. John Rusin

... when you have that underhand grip-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... the rapid force eccentric flexion that happens, that is where you get the vast majority of biceps injuries on your underhand grip. So it's the weight-

Dr. Andy Galpin

No question

Dr. John Rusin

... falling out of your hand, and it's a very linear stress that goes directly here and sometimes up into here. Two different mechanisms of injury at the biceps. I'm not saying that that happens to everybody, but when we can control controllable factors, it just goes back into where you lack stability, where you lack strength, where you're forced into positions that you're not ready for. That's where you're going to be the most vulnerable, whether it's at your biceps or whether it's at

your lower back.

Dr. Andy Galpin

Jefferson curl. With this sort of idea in mind, I think most, again, sane people will understand I probably don't want to be in an incredibly flexed or extended position when I'm doing a really heavy deadlift because of what you explained earlier.

Dr. John Rusin

Mm-hmm.

Dr. Andy Galpin

Got it. At the same time, we are definitely not saying, and I have to reiterate this even though you clearly articulated it, that your spine needs to be neutral all the time. If you're tying your shoe, go ahead. Like, no one's concerned about that. Fair? Are we on the same page?

Dr. John Rusin

Absolutely.

Dr. Andy Galpin

Okay.

Dr. John Rusin

Yeah. So you have the most amount of freedom to move your spine into side bending, into flexion, into rotation, all simultaneously, and as long as you're in body weight or light loading. So going back to your question, the Jefferson curl. I know amazing physical therapists that are utilizing this exercise for graded exposure back into segmental spinal flexion. But they're not doing it with 400 pounds off of a box. They're doing it with an 8kg kettlebell that moves to a 12kg, that moves to the 24.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And they're doing rep schemes of five or 10 with lowering under control segment by segment with graded exposure to a new position. I'm all about that. Though we don't program a ton of Jefferson curls, theoretically, that is a great way to expose the spine into a new position with very light loading or even body weight loading, and I'm all into that. Even Jefferson curls that start to integrate rotation and side bending to the side.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Those are awesome, but make sure that you're keeping the goal the goal, which is to re-expose your system into being able to move through those complete ranges of motion that we have under control and under lower end loading. When you go to, "All right, now we're going to deadlift 500 pounds," it's going to be in your best advances to go in and have a neutral spine. Like, the stronger you become, the heavier that you're lifting, the more your form actually matters, and the closer it needs to stay to your most optimal lift. And that's the polar opposite of what people do. They go, "Okay, I got one set left. I am five pounds away from a PR." They throw their form to the wind, and they just try to ego lift to hoist it up, and that's exactly the opposite of what you do. I'm very fortunate to train at one of the world's strongest gyms in Madison, Wisconsin, Madtown Fitness. Literally people deadlifting 1,000 pounds routinely just next to you while we're doing pull-ups.

Dr. John Rusin

And we have bodybuilders that are world-class. We have the strongest athletes in the world powerlifting and everyone in between. And you see that the people that are not only competing at a high level, setting world records, but the ones that are able to do it for years at a time, they're the ones that their form is like, "Man, this is beautiful."

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And you see the 900-pound deadlift looks better than the 750 ramp up set.

Dr. Andy Galpin

Yeah, 100%. I've actually heard a lot of coaches, really consistently over several decades now, the ones that have been around a long time will tell you routinely, the biggest key to being injury and pain-free throughout a career in a sport like powerlifting or weightlifting is not necessarily a specific type of technique or non-technique. It's just that your technique is insanely consistent.

Dr. John Rusin

Yes.

Dr. Andy Galpin

And then understanding that point, it will actually change as you get heavier, and a lot of the times, in order to create enough stiffness to bench 800 pounds or to squat 1,200, you actually have a hard time getting into those correct positions-

Dr. John Rusin

Correct

Dr. Andy Galpin

... when you're in 300 pounds or 400 pounds. I had a friend like that, who was like a 2,400 total kind of guy, and I was at a meet with him, and he was trying to squat 1,000. And in the back, it's 700, 750, 800, and I'm like, "Bro, you're not even close to depth." And he didn't care at all. He's like, "Yeah, yeah, I won't be until we get to 900." I was like, "What?" And he gets to 900, bang, green lights. I'm like, "Okay." There were some lifting suits going on.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

But the reality of it is he just had so much tension and so stiff. But we're talking about a very specific A niche example here.

Dr. John Rusin

But the same thing can be pushed into the principles of why they're doing what they're doing.

Dr. Andy Galpin

Correct. Yep

Dr. John Rusin

I've always been a big proponent of why should we look at a world-class athlete as any more important than my grandmother who's 67 years old, who wants to get on the ground with her grandkids, wants to walk the 5K on Thanksgiving, and wants to be strong and healthy for her next two decades? Why is she more important than the NFL quarterback? She's not.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Or, excuse me, the NFL quarterback's not more important than her.

Dr. Andy Galpin

I liked where you were going the first way you were saying it.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Okay. Yeah.

Dr. John Rusin

Yeah, that grandma doesn't matter.

Dr. Andy Galpin

It's hell with grandma.

Dr. John Rusin

No, but really, you take the principles of-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... what makes somebody strong and capable and resilient, and it doesn't matter their activities that they're looking at. It's being able to manage the human movement system in such a way that we can challenge it strategically, that it can stand up for the test of time, but it can also perform in the real-time.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Many times coaches are focused on one thing or the other. It's like, "Hey, we're only focused on performance over the next six weeks," and they give up their next six years because everything that they did to get them to that point burned them out or broke them down. Or somebody just is backing off so hard that they're not even useful to the client anymore because, "Oh, we're going to slow roll into longevity now." Still got to lift, still got to build muscle and maintain muscle. You still got to not have your power be ripped out of your body after the age of 31 at 1% to 2% per year. You still have to maintain all these physical capacities. So if you're focused on longevity, it doesn't mean back off. It means just be more strategic. But all these things come together, and I think it's just called smart and intelligent training with a more mindful approach to programming.

Dr. Andy Galpin

My hope is that this whole idea that performance is only for athletes, I hope it's been enough decades where we don't have to answer that question anymore.

Dr. John Rusin

Mm.

Dr. Andy Galpin

This concept too, that performance is this really esoteric thing that only professional athletes do. But people wanting to be pain-free or people wanting to be just healthier, that's not what they do. And I'm like, "Well, okay. Well, look what you're doing. Oh, you want to be stronger? You want to be more balanced?" All the things you walk through, I'm like, "Was that grandma or was that the quarterback?" I actually can't tell at this point, which is the whole damn point.

Dr. John Rusin

There's certain attributes of every great, well-rounded, well-balanced training program that you need to have in play. And this is relatively controversial, but this is the program style and the training style that we run most successfully, is multimodal programming, meaning that we are co-managing all physical characteristics for every type of clientele. It doesn't mean that we have an equal distribution of power and strength and hypertrophy-

Dr. Andy Galpin

Of course

Dr. John Rusin

... and cardio and conditioning, and mobility and athleticism. We're not just evenly distributing it across the board.

Dr. Andy Galpin

Yeah

Dr. John Rusin

We're still manipulating based on the individual at hand, but we are always keeping a base-level competency and maintenance of all, always, for everyone.

Dr. Andy Galpin

So I would love to know more about how you're thinking and how you're actually managing this, what was it? Six attributes, nine attributes, or whatever you went through, and then how you're actually building systems around that.

Dr. John Rusin

Yeah. So I'll call it out first, though. It's like, as much as we want to talk about the sexy topics of six physical characteristics, none of those characteristics actually matter until somebody's feeling well enough, until they're moving their body competently enough, until they're pain-free enough to start chasing the next realm, which is performance.

Dr. Andy Galpin

Got it.

Dr. John Rusin

We are trying to get the body feeling as good as possible, knowing very well that 100% pain-free is not part of a normal human experience. We're always going to-

Dr. Andy Galpin

Correct

Dr. John Rusin

... have the risk of pain and injuries and flare-ups. It just matters how you bounce back from them and the baseline that you're starting from so you can bounce back quicker, you can be more autonomous on that bounce back, and ultimately, you can never be sidelined for a long time of doing what you want to do. Once you achieve that, though, "Man, my body's feeling great. I'm moving well. Now what's the next chase?" We just got our mechanical and our movement health on point, and that's something that a vast majority of people aren't focusing in on. But once they do, what's next? Strength, power, muscle mass, the ability to move athletically, move through space, ultimate mobility that transfers into life. All those things can now have more focus on them because the big moving item that was holding you back the entire time, being in pain and always having chronic injuries and being inconsistent because of those, that is no longer the market issue holding you back.

Dr. Andy Galpin

What level does pain need to get to for you to need someone to go back to this reset?

Dr. John Rusin

So if somebody is limited in their movement patterns, so when you're looking at the six foundational movement patterns, squat, hinge, lunge, push, pull, carry, we want the ability to restore each and every one of those movement patterns. And by restore, it doesn't mean that we need to have you at the apex. It means that you need to be on the scale. Most people aren't even on the scale yet.

Dr. Andy Galpin

Right.

Dr. John Rusin

They're not even entry point into the rebuild of those movement patterns. But as soon as we have some sort of entry point for all six movement patterns, no matter if it's a single kettlebell deadlift versus a 600-pound barbell deadlift, as long as you're on the movement pattern pyramid, awesome. That means that we have things going well for us in terms of graded exposure for that rebuild. We also want them to be on these movement pattern pyramids at under a four out of 10 subjective pain scale.

Dr. Andy Galpin

Yep.

Dr. John Rusin

And preferably, when somebody comes in to train and they're at a four or five, we want them to start training in their actual program after the warm-ups at a one, two, three. We want a reduction in the subjective pain before they start training. And then the big indicator for us for

having success for a client that we know that we're going to have success with is that we can reduce the overall pain signaling response after the training session.

Dr. Andy Galpin

Okay. Got it. Yeah

Dr. John Rusin

So they come in at a five out of 10.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

You reduce them down to a two out of 10. You train them hard and heavy that day, and they leave at a two out of 10. So that means that you brought them in in pain, you balanced them back down to being more pain-free, and you got them things that built their capacity for long-term health and wellness. That is really the North Star for every one of our programs.

Dr. Andy Galpin

So let's assume we've got that, and the person has gone through these progressions, and they're, I'll just say, reasonably pain-free.

Dr. John Rusin

Yeah.

Dr. Andy Galpin

Most of the time, they're not in pain. Occasionally, they train really hard or they go do X, Y, Z, something wakes up a little tight, a little tender. That's not really what we're worried about-

Dr. John Rusin

Mm-hmm

Dr. Andy Galpin

... or concerned, right? Where maybe something pops up that's maybe weeks along, but we kind of get them back on track. Performance is the next step.

Dr. John Rusin

Yep.

Dr. Andy Galpin

And they go, "Okay. All right, Doc. I'm good. I feel pretty much there. Now I want to actually be this well-rounded beast. I want to push into performance." How does the training now modify? Am I still doing my warm-up? And what are the significant differences in the training modalities as well as the progression strategies now that I'm in that performance space?

Dr. John Rusin

Yeah. You always have to have oil changes every 3,000 to 6,000 miles, so that warm-up is always going to stay in there. It's going to be your 10 minutes of daily body maintenance. But now we can have more concrete solutions for their capacities being built in the training program itself that isn't limited by pain. So really what we want to look into is pushing three predominant core characteristics onto that client right away. We should already have been strength training, but now we're really going to chase progressive overload.

Dr. Andy Galpin

Yep.

Dr. John Rusin

And then we want to be able to have the maintenance or the gain of muscle mass, and then we also want muscle quality, AKA our ability to rapidly create force with power and athleticism. So those are the three that we want to place into programming right away. And many times, people go, "Oh, I'm pain-free now. Now I'm going to go back into one characteristic. I'm either going to go back into only traditional strength training, everything three to five reps, and that's everything from lateral raises to barbell back squats."

Dr. Andy Galpin

Yeah.

Dr. John Rusin

"And you know what? I'm older now. I'm 40 now. I don't need power anymore. I don't need to train the thing that I'm losing rapidly."

Dr. Andy Galpin

Yeah.

Dr. John Rusin

So they neglect power or moving rapidly or faster than they're already moving. So it's almost like a learned neglect. So we want to move that into their system right away. And then, I think it's picking up more popularity now, but the ability to gain and maintain muscle mass, like muscle health, it's a popular topic. We know this.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

But I think that there's more than just getting super jacked to the point where you don't actually have functional transference of the muscle mass that you're building into strength and then power, and then, of course, not neglecting or taking mobility out of the equation.

Dr. Andy Galpin

What it sounds like to me is moving through a more intelligent progression of all the steps and not allowing anyone to leave anything, any major characteristic, off the table, presuming they don't have some specific goal. Right? "I'm trying to gain X amount," or, "I want to hit a PR in this."

Dr. John Rusin

Even if they do have a specific goal, I will still keep all the core characteristics in program to a minimal effective dose.

Dr. Andy Galpin

Ah. Yep.

Dr. John Rusin

Minimal effective dose, for a lot of these core characteristics, are very amounts of low exposure. We're thinking about the maintenance of low level of power. We're talking about maybe 25 total reps per week. So that's not a huge investment of time or volume that is going to take away from anything else. It's not going to compete. There's this old theory that concurrent training doesn't work-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... because if you try to build muscle and be strong at the same time, then they're both going to suffer. And that is not something that I'm a big believer in because these are on an overall scale. It's a scale of all things being able to be positively impacted. But the reason that I like to prioritize strength above all else is because we know that raising strength has the ability to then transfer that into every other core physical characteristic more directly than other ones could influence strength downstream. So strength's always going to be the number one that we go after. But strength needs to be better and more clearly defined. We're not just talking about power lifting here.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

We're not just talking about strength as squat, bench, and deadlift, if you're super open-minded, overhead press. That's not how we look at strength. We look at strength being able to have external load placed on the system in a particular rep scheme that's usually around three to eight repetitions, where you're hitting a straining component to the last rep or two that actually has tension build up sky-high in the system but also has a neurological impact that can raise the tide

and lift all ships in terms of your performance. So when you think about strength, it could be a Bulgarian split squat, it could be a pushup, it could be a pull-up. It could be any of these different variations, as long as it falls into being able to be externally loaded to almost failure through a straining point and having your form and technique hold up.

Dr. Andy Galpin

I actually have to ask about something that you glossed over, but I find really interesting: carries. If one were to start integrating farmer's carries or any forms of carries into them, what are some best recommendations to get going? What should they be watching out for, and how do you actually integrate that into your programming?

Dr. John Rusin

I think loaded carries are some of the best ROI exercises that you could possibly do for almost everybody. And you look at high return-on-investment exercises, they have three criteria: They are strong, they are safe, and they are highly accessible, meaning that almost anyone could do them.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

So when you think about loaded carries, I have clients right now that are youth athletes. 10, 12, 14 years old, they're loaded carrying. I have extended aged people, active agers, up into their 70s and their 80s, they're loaded carrying. Because there's nothing more human than being able to carry load, reciprocating the arms and the legs through space, and actually locomoting the body. And the cool thing about carries is that you're carrying from a neutral position at the shoulders, a relatively neutral position at the spine, neutral position at the hips, even though we're reciprocating right and left step. It allows us to really be in control of our body and have that more functional transference. And that is forward carries, backward walking carries. I like nonlinear loaded carries, being able to walk through space and being able to actually use some of the mobility that we have at our spine plus our hips and our pelvis.

Dr. John Rusin

A lot of these different variations are high yield, they are low risk, and I love programming them as metabolic finishers or-

Dr. Andy Galpin

Mm

Dr. John Rusin

... functional conditioning more than anything else. Usually 15 to 20 second loaded carry, we do it with duration and not distance, so people can stay under control while they loaded carry. That's

the way that we'll program it. And this is super funny because it was 11 years ago, maybe 12 years ago at this point, I wrote this article for the NSCA journal about loaded carries.

Dr. Andy Galpin

Mm.

Dr. John Rusin

And at that time, it was the first time that it was actually a research article placed out on metrics for loaded carries, like what somebody should be able to loaded carry. And we established three different loaded carry metrics for three different distinct populations. The first one was to be discharged from physical therapy. The second one was general fitness. And then the third one was elite sports performance. So we established core metrics out of clients that we were actually working with. Post-physical therapy, I was a believer that we needed to be able to carry 50% of our body weight and walk it for 30 seconds. And the way that we tested this was two dumbbells down to the side. So-

Dr. Andy Galpin

So this would be 25% per hand?

Dr. John Rusin

Correct. So if I'm 200 pounds, that means that I have a 50-pound dumbbell and a 50-pound dumbbell, and I'm walking that for 30 seconds.

Dr. Andy Galpin

Clear.

Dr. John Rusin

Second one, general fitness. 100% of body weight. 200-pound person, 100-pound dumbbell, 100-pound dumbbell. No straps, no running with the weight. This is time-based. And then the last one, everyone got really butthurt over. I'm sorry, but they did. 200% of body weight for elite sports performance in the loaded carry. Now we're on a trap bar. So we pick it from an-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... elevated height.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

You're inside the trap bar, you walk it for 30 seconds. And this is a great test because relative

strength is awesome. Because it's not just grip strength-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... it's not just core strength, it's not just shoulder strength. It's strength all relative to your body weight, and we know the large-scale impact of having a strong body composition. So we really love those metrics, and that's something that we test out with my clients to this day because I think it has more of a universal goal in mind. It has a skill for the step, it has a strength component from the load, and it also has more of a global body composition component because you're moving load relative to what your body weighs.

Dr. Andy Galpin

If someone is below one of those metrics, however they self-identify, and they want to improve, three days a week, once a week, daily? How often are you typically programming?

Dr. John Rusin

So being able to go one to two days per week I think is good. Anytime you get more than two days per week, I think you are at risk of over-training your grip specifically, especially if you're not just doing 30 seconds per training session. Most likely, it'll look like you're going to have five minutes, you're going to have 30 seconds on, 30 seconds off, you're going to have five rounds, you're going to have two minutes and 30 seconds under load. That's a lot-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... when you think about just being able to have everything there. And it's going to skyrocket your vital metrics. So one to two days per week, usually one day per week, and that's going to be something that is more intensive on the carry itself. But if somebody's training, the average fitness consumer today in gyms are training 0.8 to 1.2 times per week.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

And those are only the people that show up. So essentially every time that you go in to train, you can end your training sessions with a nice loaded carry.

Dr. Andy Galpin

And this would be at the weight that you're wanting to get better at?

Dr. John Rusin

You can do it at any weight. So you can increase the duration. You're not just training it at 30 seconds. Yeah, probably the baseline is 15 seconds.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

That's the shortest that I would do. And we've done five-minute carry tests.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

In our gym in Madison, we found chalk in the treadmills, which was really interesting. We're like, "Why the hell would there be chalk in the treadmills?" People were doing loaded carry on the treadmills for five minutes at a time, and they had the kettlebells down to the side on the wood ways-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... and they're chalking up for it.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

I would've never thought, but I think that it's being more mainstream today. I think a large reason is because of the popularization of the idea-

Dr. Andy Galpin

Of course

Dr. John Rusin

... that grip strength is going to make you live longer. And it would seem like grip strength and carrying something would improve your grip strength. That's a totally different conversation, though.

Dr. Andy Galpin

Yeah. Last question on that. Any technical components to that carry strategy? Shoulders, hips, walking, or is it pretty much idiot-proof?

Dr. John Rusin

It's not idiot-proof because the way that we start clients is being able to teach them the breath and the brace protocols. If you want to be good at loaded carries, you better have your breath down, you better have the ability to brace, you better create tension at the shoulders, hips, and core. You better have irradiation at the hands interacting with the load. Without all those things, you won't meet those metrics.

Dr. Andy Galpin

Got it. So, just assume shoulder blades in that same position you described earlier, kind of back and down a little bit, rather than letting them sort of roll forward as you're walking and extending the neck and things like that. And then normal gait recommendations, right?

Dr. John Rusin

Correct. So you don't want to alter the way that you're walking to train the loaded carry. So your same step cadence, your same step distance and length and width between your feet, you want to keep that consistent. Many times, people think loaded carries and they think world's strongest man.

Dr. Andy Galpin

Yeah. Like people shuffling.

Dr. John Rusin

Shuffling through. That's not what we want to be doing. We want to have it to the point where your movement quality holds up under load.

Dr. Andy Galpin

And if they have any wrist or hand or other issues where they can't hold something, do you ever use... Certainly, a yoke would be one example, but let's just assume most people don't have that. Is there any value here in vests or anything else that you could put on someone? Or do you typically think, "If you can't carry something here, let's do something else instead?"

Dr. John Rusin

So using the example of the study we did with NSCA, that one was just weight down at the side. But the sky's the limit.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

We can get double front rack, we could be in a Zercher position, we could do double overhead, we could have load over one shoulder on a sandbag versus another. We could have load on the system. That is the key to loaded carries. You have some sort of load on the system, and you're

able to walk with it. And if the wrists or the hands are the limiting factor, then get it on a different portion of your body. Get it into the crux of your elbows, put it onto your stomach, get it over the shoulder. Do anything possible, because the real benefits there are not just grip strength. We're not just focused on grip strength all the time.

Dr. Andy Galpin

Yeah.

Dr. John Rusin

Grip is awesome, but the way that I want to improve grip strength is most likely not carrying for 30 seconds. That's a different conversation. But we just want to be able to load the body and move through space. The lowest level of loaded carries is just putting something in your backpack or your rucksack and being able to walk for 30, 60, 90 minutes-

Dr. Andy Galpin

Yeah

Dr. John Rusin

... and actually putting low level of load on the system for longer durations still constitutes a loaded carry.

Dr. Andy Galpin

Amazing. This has been incredible. Thank you so much for sharing all this stuff. You do this for a living, and yet you showed up here and gave us all your secrets. Which was awesome. I was reading your book again the last couple of days or earlier this week and thought to myself, "I have to do this warm-up piece. I've just got to build that in. It makes too much sense to not do so." I know that's a small fraction of what you do, and we would take days and weeks to get it all out of you, especially on the performance side-

Dr. John Rusin

Yep

Dr. Andy Galpin

... which I know you probably spend more of your time on these days. So I look forward to learning more about that side. Maybe you've got more products or something coming out, more education down the line, and I'll surely be buying all that stuff and reading and learning from you as I have for many years. So really appreciate you coming out, and thank you so much for sharing everything. It was incredible.

Dr. John Rusin

This is awesome, Andy. It's really cool to be able to look across the table at a true expert, and I always looked at you as one of the OGs. Being a strength coach myself, you always have those

people that reach this new level of being able to do things the right way, but to be able to reach a bigger audience, to be able to impact an entire world and an entire industry in such a way, and know very well that that was our guy that was able to do that. Me and my team over at Pain Free Performance, we've always looked at you that way, and that's why we hold you in such high regards, because even where you're at today, we know that you were able to do things that we knew that we needed a champion for. Now you're our champion.

Dr. Andy Galpin

Oh, appreciate it, man. Too kind. Thank you for joining for today's episode. My goal, as always, is to share exciting scientific insights that help you perform at your best. If the show resonates with you and you want to help ensure this information remains free and accessible to anyone in the world, there are a few ways that you can support. First, you can subscribe to the show on YouTube, Spotify, and Apple. And on Apple and Spotify, you can leave us up to a five-star review. Subscribing and leaving a review really does help us a lot. Also, please check out our sponsors. The show would not exist without them and their exceptional products and services. Finally, you can share today's episode with a friend who you think would enjoy it. If you have any content questions or suggestions, please put those in the comments section on YouTube. I really do try my best to read them all and to see what you have to say.

Dr. Andy Galpin

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