

Dr. Andy Galpin: Optimize Your Training Program for Fitness & Longevity | Huberman Lab Guest Series

In episode 4 of a 6-part series, Andy Galpin, PhD, explains how to design an effective training program for fitness, health and longevity through a 10-step approach. He covers goal setting, exercise selection, balancing, recovery periods and real-world challenges. He provides a year-long training example that considers sleep, sunlight and social connection. The program is modifiable for personal fitness goals and experience.

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Guest Series | Dr. Andy Galpin: How to Assess & Improve All Aspects of Your Fitness:

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ANDREW HUBERMAN: Welcome to the Huberman Lab Guest Series, where I and an expert guest discuss science and science based tools for everyday life. [MUSIC PLAYING] I'm Andrew Huberman and I'm a professor of neurobiology and ophthalmology at Stanford School of Medicine. Today's episode marks the fourth in the six episode series on fitness, exercise, and performance. And today's episode is all about optimal fitness programming, that is how to design a fitness and exercise program that can achieve the goals that you want for fitness and for sports performance. Dr. Andy Galpin, great to be back. In previous episodes, you taught us about the various adaptations that occur at the level of cells, at the level of organs, indeed at the level of the entire body that underlie things like improvements and strength and speed, hypertrophy, AKA muscle growth, and the various forms of endurance. And you laid out beautifully the various protocols that one can do in order to achieve each and every one of those adaptations. Today I would love for you to teach us how we can combine different protocols to achieve multiple adaptations in parallel-- for instance, how to improve endurance and strength, how to achieve some level of hypertrophy, perhaps directed hypertrophy at specific muscle groups, while also maintaining endurance and perhaps improving speed, for instance. And if you would, I'd love for you to tell us how

we can combine different protocols and vary those across the week, across the month, across the year so that we can make regular progress and perhaps even could give us a window into the ways to make the fastest progress possible. ANDY GALPIN: Yeah, I would love to do that. We've invested a lot of time in the previous episodes covering background and concepts and detail about the physiology so you understood why you're making the choices you're making and why other choices are less effective. In this discussion, I would actually like to jump maybe more directly to the answer and kind of get right into the protocol and maybe a little bit less background. If you're interested in that stuff, I suppose you have to go backwards a little bit and watch some of those previous episodes. But I would love to jump in to just some samples, some case studies, if you will, and kind of walk through different protocols. I know that over the course of my 11 years as a college professor and being in the public space a little bit, probably the most numerous style of question I have gotten is exactly that. So I know the rep range for this, or I know the style of training for that adaptation. But how do I put them together? And I would just like to spend our time today going through those things. And the reason I want to do it is this. Some people listening at home surely just love exercise. They're already bought in. And they're going to train no matter what. And they're interested in just actually being more effective. And so the way that you structure and put your plan together will in large part determine getting more progress for less effort or actually being able to put the same amount of effort in and getting results faster. There's also some folks probably listening who are like, OK, I exercise. I do what I can. I'm bought into the benefits that you've talked so elaborately over the 100 plus episodes you've done about the various benefits of exercise. But you don't like-- you're kind of doing it because you know it's important. But you're not there. So for those folks, it's sort of like, OK, how can we actually make this thing more effective so we can make sure you hit the things you're absolutely have to get for the short and long term benefits to make sure that you're looking the way you want to look, you're performing physically the way you want to perform, and that you can do that across your lifespan? So how can we give you all some structure to where, again, you don't have to turn into an absolute lover of physical fitness and it doesn't have to take over your life but you can still get more results for your same time restrictions, whether that be two days a week or five days a week or only certain access to equipment or experience, whatever the case may be? How can we help those folks as well put together a protocol that will get them closer to their goals with less restrictions? ANDREW HUBERMAN: Fantastic. And I'm hoping that

along the way, you'll also point us to how often to take the fitness assessment for each of the adaptations that you referred to in a previous episode. We will also link to that fitness assessment segment in the show note captions for this episode because that fitness assessment for different adaptations, I think, is a really powerful way for people to touch in and see how much long endurance do they have, how much anaerobic capacity do they have, how much strength do they really have. And then perhaps you'd also be willing to throw in a couple of additional ways that we can assess our level of fitness and progress in this arc of fitness program across the year. ANDY GALPIN: Amazing. I can't wait to do that. I think it is also important before we jump in to acknowledge a lot of folks may be thinking to themselves, I don't really necessarily need a plan. Why do I have to do that? I don't have a certain goal I'm going after. I'm not running a race any time soon. I'm not a competitive athlete. I just-- I go to the gym, and I workout. And that's great. Well, I would like to try to convince you that regardless of where you're at, having a plan will achieve those things we just talked about, which is more success in a shorter time frame. There's actually a significant amount of research to support this. Those individuals who go on a specific training plan compared to those who do not will receive better results independent of the effectiveness of the program. So we've talked in previous episodes about tons of different styles and strategies. And to reiterate, it really doesn't matter which one you pick. The fact that you have a plan is always more effective than not having a plan. And so, again, even if you're not planning on competing with something, if you want to shorten the amount of time you're in the gym, get more results from it, I would strongly encourage to put something together. The two largest reasons why people don't get results with their fitness training protocol is number one, adherence, and then number two, some sort of progressive overload. Both of those two things are challenging to accomplish without a plan. So the reason people don't go to the gym, one of them, and one of the reasons why it takes them so long is because they don't walk in with a very specific plan. It's sort of like going to the grocery store and figuring out what you're going to buy versus knowing exactly what you're going to get in your shopping list, grabbing those things, and getting out. You'll notice your time in the grocery store is half the length. You're more productive. And you didn't waste money on extra things. So that alone will drive adherence because you're now going to think to yourself, oh, that 90-minute workout I do is actually really just 60. And so now the next time you go to training you're like, man, I don't have 90 minutes. You realize it's only 60 or 40 or 30 or 20 or whatever it needs to be. So that alone will get you there. The second

part of that which is overload. It's very difficult to understand and remember, well, the last time I did lat raises, I used I think 5 pounds. And I think I did like 12. Well, if you don't have some sort of system of tracking-- and this can be as simple as a notebook, just writing down what you did before and doing a little bit more the next time. That is going to almost guarantee you success. So having some structure-- and this structure can be fairly loose, so we're going to talk about a bunch of different examples--

00:07:19 Momentous, Eight Sleep

is something I strongly encourage everyone to utilize for their exercise. ANDREW HUBERMAN: Before we begin, I'd like to emphasize that this podcast is separate from my teaching and research roles at Stanford. It is also separate from Dr. Andy Galpin's teaching and research roles at Cal State Fullerton. It is, however, part of our desire and effort to bring zero cost to consumer information about science and science-related tools to the general public. In keeping with that theme, we'd like to thank the sponsors of today's podcast. Our first sponsor is Momentous. Momentous make supplements of the absolute highest quality. The Huberman Lab podcast is proud to be partnering with Momentous for several important reasons. First of all, as I mentioned, their supplements are of extremely high quality. Second of all, their supplements are generally in single ingredient formulations. If you're going to develop a supplementation protocol, you're going to want to focus mainly on using single ingredient formulations. With single ingredient formulations, you can devise the most logical and effective and cost effective supplementation regimen for your goals. In addition, Momentous supplements ship internationally. And this is, of course, important because we realize that many of the Huberman Lab podcast listeners reside outside the United States. If you'd like to try the various supplements mentioned on the Huberman Lab podcast, in particular supplements for hormone health, for sleep optimization, for focus, as well as a number of other things, including exercise recovery, you can go to [livemomentous-- spelled O-U-S--](https://livemomentous.com/huberman) so that's livemomentous.com/huberman. Today's episode is also brought to us by Eight Sleep. Eight sleep makes smart mattress covers with cooling, heating, and sleep tracking capacity. I've been using an Eight Sleep mattress cover for about the last eight months. And it has completely transformed my sleep. I'm sleeping about the same amount. But I'm sleeping far deeper. And I'm now getting the proper ratios of so-called Rapid Eye Movement or REM sleep and slow wave sleep and waking up feeling far

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00:09:53 #1: Plan Fitness Goals, S.M.A.R.T. Goals

Again, that's eightsleep.com/huberman to save \$150 at checkout. So what sorts of things should people be thinking about when developing an overall fitness program?

ANDY GALPIN: A few minutes ago, we were talking about how two of the major reasons people don't get as much out of their training programs as they would like is because of one, a lack of adherence, and two, a lack of progressive overload. So the solution to that is constructing a plan that lives within your realistic limitations. So I would like to walk you through my 10-step approach to how I design training programs. Now, before I do that, I think it is fair and important for the audience to understand that this is simply my approach. I've been doing this a long time. I played college football. And I wrote my own training programs back then. I have and am still working with professional athletes in the PGA TOUR and the NFL, the NBA, Major League Baseball, as well as a ton of general population folks. So this is a combination of the evidence base that we've been talking about in terms of best practices for strength and conditioning as well as just my years of experience. So there are many, many ways one could do this. I'm not even suggesting this is the best. This is simply how I do it. This is exactly how I handle it when a new individual comes to me and how I teach my students. So step number one is assessing properly and identifying a training goal. Now, that's actually sort of funny because we hear that a lot. But a lot of people actually never take that step, not to call anybody in the

room out. ANDREW HUBERMAN: But what's happening here is this morning Andy, Dr. Galpin, and I were training together. And he was providing amazing tips on form and set rep cadence and the sort of thing. And he said, so what's your training goal for the next 12 months? And I paused. And it turned into a very long pause because-- ANDY GALPIN: Which is a nice way of saying he didn't have an answer. ANDREW HUBERMAN: I didn't have an answer. Of course, I don't just want to maintain what I've developed in terms of strength and hypertrophy and endurance. But I don't have a clear goal. So I'm hoping that by the end of today's discussion, I will be on track to a clear set of goals. ANDY GALPIN: Amazing. I'm not going to bore you all here. But, really, I can't stress enough how important that step really truly is to getting results. The analogy we use here is if you left your house and you were attempting to get to the grocery store and you just started driving and if you drove every possible route, you would eventually get to a grocery store. And so, yes, that can work. A better approach is saying, here's where I am. There's where I want to go. What is the optimal route there? And that's really what you're doing with goal. So it is a boring setup. It is not interesting to hear. I don't have any real hacks or tricks for you. But it is step number one on purpose. We have to know exactly where we're going. You can do this in two ways. Way number one is to just pick something. Arbitrarily decide I'm going to run a 5K. Or I've done that before, and I want to improve it by 10 seconds. I want to lose 10 pounds. You can just pick one. That's great. Another way is to run through that fitness testing protocol we described a few episodes before. And if you do that, you can see which of these areas that maybe you have the largest lagging in. Or what is the most severe performance anchor is how we refer to it. And then choose that as your primary goal. So either option. Some people come in to training programs with a very clear goal in mind. They want to add more muscle or whatever, whatever. OK, great. If you're like, I don't really know, I just kind of work out, then run the fitness testing protocol. You'll see what score is the lowest end. And then you'll maybe make that a priority for the next, say, three months. ANDREW HUBERMAN: So the first step is to identify a specific or set of specific training goals. ANDY GALPIN: A really nice tool for helping you set a goal is a system called SMART. Right now there's a little bit of debate on what those acronyms actually stand for. But we'll get close enough. So SMART is often Specific, Measurable, Attainable, Realistic, and Timely. So starting off with S, specific, in general the more specific your goal is, the higher likelihood you will have at succeeding in that. M, being measurable, means it needs to be something that you can actually put a metric on. So this can be objective or

subjective. But, generally, I like to have at least one objective measure. So remembering objective is something that is not based on feeling. It is not up to you. This could be something simple like your body weight. It could be how much you can bench press, what's your 1 mile time, whatever is most important to you. It actually doesn't have to be a fitness related goal. For example, if you're using fitness as a way to enhance your sleep, the main metric you may be interested in is amount of hours slept. It could be something like efficiency or whatever is most interesting. It could be work productivity. It doesn't really matter. So it doesn't have to actually be the fitness goal. But what is the motivation of why you're doing it? So that's specific, measurable. Attainable or actionable, as is often described, is something that is within your capability. So attainable-- a bad example of attainable is something like, my goal is to win more games. That may not be up to you. The other team you're playing, it could influence it, the schedule, et cetera. So attainable should be something that is within your control. Realistic or relevant to you is something that is, again, something realistic that you can achieve. You wouldn't want to make a goal that is you want to double your body mass. That is not going to happen. So think about the constraints. How old are you? What's your training experience? How much time do you really have to invest in this? And then pick something that is realistic. And then, honestly, my little twist here is take that in minus 10%. Because, typically, when people put together training programs, their goal tends to be quite lofty. And they get some small percentage of the way and realize they're never going to get there and then back off. We actually-- this sort of reminds me of a classic deception study that we did in my lab one time, where we took people and we had them do this maximal front raise. Basically, you held a dumbbell out in front of you for as long as you possibly could. And the goal here was actually-- it's a deception study. So we're tricking them. And so we said, OK, we want to just get normative values to see how long people can hold this front raise. And I think we use something like 5% of their body weight. And so they came in. And they did it one time. And we timed them. They didn't get to see the clock. They left. And then we said, we've got to come back in and repeat it. We got to do a couple of tries here to get a normal value in case it's off, whatever. Well, the participants were split up into four groups. So group one actually was told that their time was 15% lower than they actually got. Group two was 5% lower. Group three was 5% higher. And group four was 15% higher. So the second time they came in to do it, our graduate student, quote unquote, "made a mistake" and left the timer in front of them. So the first time again they did the exercise, they're just holding it.

They don't have any idea how long they're holding it. The second time, they had a giant iPad set like just a little bit off centered where they can clearly see it. So they watched the time go by. And, of course, what happened was those folks, say, who did 1 minute the very first time when they tested, they came back in to do the second time. And they're holding it. And we told them they actually got 45 seconds, when in reality they had done a minute. So they're holding it and holding it. And they think they only did 45 seconds. By the time they get to like second 40, 41, 42, they get past 45. They almost all quit, like 47, 48 seconds, because they wanted to beat their previous score but then were like, cool, I beat it. And then they quit early. So they were actually not yet to failure. But they were just happy enough to beat what they thought they'd done. And then they quit. The other group on the inverse side-- again, say they got a minute. We told them they got a minute and 15 seconds. They got to like 45 seconds, 50 seconds and started realizing, oh, man, I have 30 more seconds to go. And they quit way early because the carrot was way too far out. They realized I'm never going to get there. So I'm just going to stop now. Can you guess which group did the best on the post-test? ANDREW HUBERMAN: The ones that were just within about 5% of. ANDY GALPIN: Totally. So they wanted to improve. And so, again, say, they got a minute the first time. We told them they got a minute 5-- or, sorry, they got a minute 5 the first time. We told them they only got a minute. They actually exceeded that greatly because they wanted the PR. So making sure that goal is properly aligned, it needs to be a little bit scary, a little bit unrealistic. You're going to have to work for this. If it's too easy, you'll quit. You won't feel like a challenge. If it's too hard, though, you'll quit early as well. So you want to make sure it's that reasonable balance of, ah, should I train today? Or like maybe I'll just go through-- if I do that, I'm not going to hit. I got to get after it. But not like, oh my God, like, there's just no chance here. So you're going to walk away early. ANDREW HUBERMAN: That's a fantastic study, I have to say. It's very simple. I think it illustrates a number of important psychological principles about goal setting, motivation, self perception, but also the dopamine system. The dopamine system is this universal reward system that-- meaning it doesn't only work for food or only work for fitness goals or only work for academic goals or relationship goals. It is the universal substrate for all of that. And I actually think there are some real gems of information in that study design that you describe. So just cue that for maybe a potential collaboration

00:19:52 Intermediate Goals, Dopamine, Identify Your "Defender", Goal Timing

between our laboratories because-- ANDY GALPIN: Yeah, absolutely. ANDREW HUBERMAN: --I think it's very important. But it does cue up another question relevant to fitness. In particular, which is what are your thoughts on intermediate goals? So let's say my goal is to drop 2% of body fat from where I am now a year from now. So roll into the next year from now about 2% lower on body fat but maintain my lean body mass or maybe even increase it. How should I assess progress? Because the dopamine system loves a goal. It loves anticipation of a goal. But it responds best to, we sort of re-up, if you will, our dopamine any time we get a signal that we are on the right track to that goal. And that signal could be, OK, I did the workout. I just trust that these workouts are going to give me the result I want. But, of course, we know that when people get a glimmer of the idea or some objective feedback that they're on the right path, that dopamine system really fires and provides motivation for continuing toward the ultimate goal. And as we've talked about in the strength, speed, and hypertrophy episode, resistance training itself has this built into it because of the infusion of blood into the muscles. You actually get a little window into what you might get in terms of an adaptation simply by way of the so-called pump, whereas endurance type work generally doesn't have that. You don't see yourself get better drop back and then adapting to actually get better. But that's actually what you see with weight training. So given all of that contour of the dopamine system, what sorts of intermediate goals should I set for myself or should somebody set for themselves? And I realize it will probably depend on the ultimate goal. But would you say check in on progress once every week, every month, three months? ANDY GALPIN: I don't know if you can tell the look on my face. I love this question and this topic. I spend so much time on my senior and graduate level program design course. I've been fortunate to work with a few athletes where we've had multiple years. And if you can really take the time to step back and go-- it's not about optimizing for the next six weeks. And in this case, it's not the next fight. It is the championship fight that we need to get to in three years. Or it is the Olympics, which are on a quad program. You're really optimizing for that for a year. If you can have that foresight and really think about that and then work backwards, you can see some pretty tremendous things. The sort of saying that is we tend to overestimate what we can get done in a week and underestimate what can happen in a year. That can be extraordinarily powerful. However, you have to have those metrics called out ahead of time because you will lose motivation in that short term because you won't see that

result immediately. But if you remember, I'm on a path to 4% or 2% or whatever you need to be, therefore, I only need to be this far right now. I need to be that far and then that far. It's actually quite clear. And so what we would actually do in that scenario, not to go so off track here because I can really go on this stuff, is-- let's say it was the year recommendation. You're going to actually need to go to the last part of SMART, which is timely. So part of setting this goal is making sure you understand the time domain responsible. And it's actually quite great here because, not to go Inception on us, where we're like list within a list, and Rob kills us over here. But number one of this program design thing was assessing your goal. Number two is identifying your defender. What I mean by that is, what is stopping you from hitting that goal? So you want to lose 2% body fat in the next year. OK, great. What's going to stop us? Once we can achieve that, and we'll go into more of that in a second, then you just start walking that 2% backwards. So you might have to go something like this. Look, every time I start working out really hard, I always get hurt. Interesting. OK, great. So maybe instead of jumping really hard into a high intensity interval training program, knowing we're likely to hurt something or get burnt out or quit or whatever the defender is for you, maybe we invest something right now, which is maybe improving your flexibility or working on movement technique, whatever is going to stop you from getting hurt. Or maybe we progress slower so we don't get there. That will allow us to do the work necessary to hit that goal 12 months from now, not two weeks from now, not two months from now. Maybe that's not the case. Maybe you're like, no, look, hey, I move well. I feel like I'm in decent shape. I've got enough muscle mass on me. We've talked in previous episodes why having insufficient muscle mass is sometimes detrimental for fat loss. So you checked all that boxes. I don't get hurt very often. I got equipment around, no problem. I've got the time in my schedule. And I have enough muscle. Great. Well, now we maybe just split it up and say, look, we got 12 months. We got 2%. It's as simple as doing half a percent per quarter of the year. And now all we're looking at is that number. I don't have to necessarily get all these things done. I can go a quarter, half percent, half percent, half percent, half percent. You're going to get there. The other scenario that I laid out a second ago, it maybe needs to look like something like this. Quarter one is going to be 0%. Well, yeah, that's right, you may not lose a pound for the next three months. We don't care. That's not the goal of these treatments. I know that's the goal this year. That's our major macro cycle goal. We're going to get there. But to get there most effectively, we need to invest in working more with your chiropractor or whatever the thing is. That

will allow us to then go half a percent quarter two, when we can really start training. But we're going to ramp into it. Quarter three we're going to go another half a percent. And now we're halfway there. Quarter four, we've invested so much you're ready to go. We're going to go hard. We're going to get that last 1%, that last quarter. And we're going to get there. And you won't be hurt. ANDREW HUBERMAN: So that makes it very clear. And I can also envision how the precise structure of these intermediate goals would vary depending on what sort of adaptation one is pursuing. And I do remember from our previous episodes that fat loss itself is not an adaptation. It is a byproduct of other adaptations. So I just want to make sure that you know

00:26:25 Multiple Goals, Synergistic Goals, Interference Effects

that I was paying attention. It's committed to memory. ANDY GALPIN: Absolutely. ANDREW HUBERMAN: Some goals, such as fat loss, are very quantifiable. And yet, they might not be linear. It's hard to know-- the assumption is if you ingest x fewer calories than are required per day, then you'll lose x amount of weight, some percentage from body fat. I think that cues up the idea that we need to build some flexibility into our thinking about these intermediate goals in order to just make sure that dopamine system isn't tethered to exact numbers because after all a reduction in 2% body fat, for instance, is really a desire to achieve a different sort of overall body composition or recomposition. I don't know, by the way, that that's my exact goal. I think one of my goals is to be able to run a mile faster. And I'm sort of haunted by this experience of wanting to run cross-country in college and trying to walk on. We weren't a Division I school. But the threshold for being considered for the team was you had to run a sub 10-minute 2 mile, which turns out to be very, very fast. ANDY GALPIN: That's really hard. ANDREW HUBERMAN: I did not do that. I didn't even come close. And I don't think that I could reasonably do that now. I'm not interested in committing to the kind of training required. The sacrifice isn't meaningful enough for me. ANDY GALPIN: Fair and honest. ANDREW HUBERMAN: But lowering one's time to run a mile by, I don't know, 10% seems like a reasonable goal across six months. ANDY GALPIN: Sure. ANDREW HUBERMAN: Great. So in the case of a goal like that, clearly there are specific training programs. But this raises the issue of, what if I have other goals as well? And at what point do people having multiple goals start to set up collisions between goals? How do we know whether or not something is reasonable not just on its own but because of the

other things that one has structured into their program. So being able to reduce a mile time by 10% in six months, OK, maybe that's doable. Maybe it's not. You can tell me. But also being able to double the amount that they can do for single repetition leg extension for that matter, at the same time those seem like incompatible goals. ANDY GALPIN: So a couple of things. Number one, the more specific and precise you can be with a single goal, the faster you will get there, generally. So in theory, if you had one thing you wanted to achieve, the best way to go about it is to focus on that. Give it the most priority. That doesn't mean you can't do anything else along the way. You can. But you would want to focus on that. The more additional goals you bring in, the more distraction you're creating for that primary goal. Depending on what those goals are, you can actually do them at the same time. Some other combinations are less effective. Think about it like this. We went through those nine adaptations. And we went through them in a specific order on purpose. The closer those adaptations are together in that list, the more compatible they are to training each other. The further away, they become more challenging. So just to give a few examples. If you wanted to improve your speed in power, you could basically train those simultaneously. They would not interfere with each other at all. And, in fact, since power is speed times force, it would be complementary. If you just walk down the line from there to strength, hey, same thing. If you get faster, that's going to aid in strength because force is mass times acceleration. So if you improve acceleration, you're contributing to strength. Same thing with power. So speed, power, and strength are generally very complementary. You can absolutely train all three of those goals at the same time and have no issues. Getting into hypertrophy, now we've got a little bit of distinction. If you're going to train strength and hypertrophy, as we talked about in that episode, at the base those are going to be complementary. You add on some muscle. You're going to get stronger. You start training for strength. It's probably going to help you out on some muscle mass. As you get to the end of that spectrum, the overlap between the two starts to go away, such that if you truly wanted to maximize strength above everything else, if you continue to train for hypertrophy as well, that's going to take too many resources out of your recovery bin. And you won't be able to do that. The inverse would also be the same. If you're training to maximize strength, you wouldn't be able to put enough volume on to get sufficient hypertrophy. So if you wanted to then combine speed with hypertrophy, you're going farther away from each other, which means it's going to be more and more distraction. So the hypertrophy training would cause a ton of fatigue. You wouldn't be able to go at

max speed for your speed or power strength. So you're going to be compromising those results. Now, speed training won't compromise your hypertrophy training because it's non fatiguing. And so, boom, here we have a little bit of an interference effect one way but probably not the other. Let's move down the spectrum one more time and get into endurance. We won't go through all of these things. But you're getting the idea here. Oh, a little bit of high intensity intervals? OK, cool. Now, would that compromise my speed, power, or strength? Probably because there's a little bit of residual fatigue. If the volume was low enough, then you'd be fine. All you're worried about there is not necessarily like some sort of cellular mechanism. It's just simple fatigue. It is amount of energy expenditure versus is that compromising my recovery to come back. Would those first three or four of those-- speed, power, strength-- interfere with your ability to elevate your anaerobic capacity? Probably not. Almost surely, in fact, if you look at any of the literature on endurance training, you will see that speed, power, and strength almost always improve endurance. Endurance training added on top of strength can be detrimental, can have a neutral effect, but generally doesn't help one get stronger by adding additional conditioning unless you're so unfit you can't get through the volume needed in the strength training. One more example here so we don't drag this out too far. In the case of something like I want to lose fat, well, hey, we don't have to worry about interference. It doesn't really matter. If you're fatigued for your hypertrophy session, not a big deal. We're just trying to get some work done. If your hypertrophy session fatigued you from your conditioning, it's cool because you got the work done. So you don't have to worry about it so much. So it really kind of depends on the actual goal. And what you want to pay attention to is, actually, what are the chances of overlap, which means like what are the adaptations you get physiologically that cross over from one to the other? And then what are the ones that are actually going to start interfering? In fact, in my class, I have this giant matrix chart of interference effect going from adaptations through a whole bunch of systems, everything from handling pH to lymphatic drainage to bone marrow density, et cetera. You can walk through these whole things and see which ones actually have a positive effect, which ones have a massive positive effect, and then which ones actually have a little bit of an interference. And perhaps if you guys are nice enough, we could throw that into a newsletter or something, some PDF or something. ANDREW HUBERMAN: I think that would be immensely valuable. I think some of that more extensive information, when it's laid out in grid form like that is really useful. So we should-- well, now we've said it. So we-- ANDY

GALPIN: I didn't say I would do it. I said perhaps. ANDREW HUBERMAN: I think it's a great idea. I think it's a terrific idea. The idea that items closer to each other on the list of those nine different adaptations are going to be easier to achieve in parallel than items further apart makes perfect sense. And what I heard was that there's a few caveats that might seem minor. But they're actually quite important, such as anything that is relatively low intensity and doesn't impede recovery can probably be included as a parallel goal. So some speed work in conjunction with some long duration cardio work, versus even though we're talking about number 2 on that list and number 9 on that list. ANDY

GALPIN: In that case, the long duration endurance, even if it's low intensity, may actually interfere with the speed if the volume gets too high. If you're talking about, I went on a 30 minute jog, for most people, it's totally fine. What we're really talking about here is when the miles start piling up. And the time really starts getting there in combination with some of the things-- the factors we've talked about earlier, which is exercise choice. So more eccentric landing based exercise choices. Running, for example, is more likely to interfere than cycling because you're not landing. Swimming is low impact. So if you're going to do those things, you can hedge your bets a little bit by choosing an exercise choice that is less impactful. Again, if we're literally-- because there's oftentimes confusing here is like, oh, don't do 10 minutes on the treadmill before you lift. You're going to cut-- oh, time out. Warm up is fine. We're really talking about probably more than 30 plus minutes at higher than 60% heart rate-- random number, something like that, depends on the person, et cetera. But it has to be a decent chunk. Again, you can actually fix that by then just consuming calories. You can also fix that by making sure everything else in the hidden and visible stressor bucket is improved. So that's just like one of our tricks that we'll get into when we get to the recovery,

00:36:13 AG1 (Athletic Greens)

is you don't necessarily need to reduce your training if you just ramp up your recovery.

ANDREW HUBERMAN: I'd like to take a brief break and acknowledge our sponsor Athletic Greens. Athletic Greens is a vitamin mineral probiotic and adaptogen drink designed to help you meet all of your foundational nutritional needs. I've been taking Athletic Greens daily since 2012. So I'm delighted that they're a sponsor of this podcast. The reason I started taking Athletic Greens and the reason I still take Athletic Greens once or twice a day is that it helps me meet all of my foundational nutritional needs. That

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00:37:06 Physical Goal "Bins", Specificity

go to athleticgreens.com/huberman to claim the special offer. I'm going to take the liberty of assuming that most people fall into one of either three bins in terms of their goals, again, most people. Certainly, there are going to be people that lie outside these bins. I think if you polled 100 people or 100,000 or 1 million people as to what their major goals were in working out, they'd say, as you so nicely listed out before, aesthetic changes, functionality, and longevity. But that one in three really kind of sit higher than most people would like to perhaps even admit. They want to look good, which usually means they want to lose some fat, gain some muscle in specific places. I realize there are folks out there who want to gain a lot of muscle and just muscle everywhere. But I think most people would like to have a little more shape here, a little more muscle there to either balance out their aesthetic or to accentuate certain parts of their physique. And they would probably like to shave off some subcutaneous fat, although there are those exceptionally lean people out there. And they exist too. I think it would be gain muscle in specific places, lose fat, and do it in a way that also provides some boost to their health span and longevity. I would say that that might even be 50% of people out there. Again, I'm taking the liberty of guesstimating. Another bin I would venture is interested in getting stronger and putting on more muscle. Certainly, there are a number of people that are interested in doing that. And that could even be more muscle all over or more muscle with some accentuation to certain areas where they happen to be weaker or less developed, as it were. And then the third bin would be people that really enjoy cardiovascular work. Oh, I should say the second bin probably care about their longevity also. But it's not really foremost, like, yeah, I feel great now, and I'll live to be whatever. But I only want to do it if I get that much muscle. We know these kinds of folks. ANDY GALPIN: Yeah, I run a poll in my class every year when I ask, what, you guys all lift? And, of course, I make them put their hand up, like, you guys are in my class, you're

going to put your hand up, let you lift weights. And then I ask, why do you train? And long term health is like on the list. And they all-- I'm like any of you that selected health are liars. You're 20 to 25. You are not exercising for health. You are exercising because you want to look a certain way or get stronger. Once you get past that undergraduate age, though, the actual desire to live longer and better actually becomes pretty real.

ANDREW HUBERMAN: Yeah, I think that there are people who want to feel better. They know that exercise and the results from exercise can make them feel better. But, yeah, that second bin tends to be more focused on the aesthetic changes, it seems, or being strong. And then the third category, I think, are people-- I know a lot of folks like this, who really enjoy what are normally considered endurance type activities. And here I just want to highlight again what you so beautifully illustrated in previous episodes, that you can gain a lot of endurance even using weights or machines. It just depends on how you use them. It's not about the exercise. It's about how you perform them and et cetera.

And you, again, beautifully provided all those details as how to create endurance regardless of equipment standards, et cetera. But that third category seem to be people who enjoy running, cycling, swimming, hiking, dancing, activities that they can do for long periods of time. That often will involve some sort of skill that is based on improving motor patterns, maybe not so much stride but certainly for people that really love tennis, people that love a sport, like golf. They want to be able to not just walk. They want to walk the 18 holes. They want to have a great golf swing, et cetera. I'm not a golf player. So forgive me if my nomenclature is off. So there are three--

ANDY GALPIN: Golfer.

ANDREW HUBERMAN: Yeah, golfers. ANDY GALPIN: You don't play golf. ANDREW

HUBERMAN: Oh, got it. You don't play golf. ANDY GALPIN: Well, you play golf. You wouldn't call a golf player. ANDREW HUBERMAN: I played miniature golf a few times.

And that's about it, although Stanford does have a beautiful golf course, I'm told. I should learn how to play golf. ANDY GALPIN: I'll come up and play it for you if you want. You

come up. I'll play it. I'll tell you how it goes. Get me on that course. ANDREW

HUBERMAN: I can almost see it from my lap. So category one, I think, is a significant fraction of people. So as we lay out these different ways to assess goals and as we approach the structure of a program, as you'll tell us-- if we could perhaps touch back to those every once in a while. Again, I'm taking the liberty of assuming that we will net about 80% to 90% of people out there, again, those categories being people who want to lose some fat, maybe build some muscle in specific areas on their body, and really want to be healthy. They want to feel great. And they want to have a long health span

and lifespan. They want to live a long time feeling great. Second category, people want to build more muscle and strength. Sure, they don't want to damage their health. But that's not their main focus. Their main focus is on building muscle and strength. And then that third category of people who really want to do more endurance type work, feel great and strong doing it but not because they can carry heavy weights while they're doing it. But rather, they can feel vital and they can push harder for longer and maybe even translate that to some of the more recreational type activities or sports, like tennis, and things that are more long duration, playing soccer or maybe even softball or things of that sort. ANDY GALPIN: Yeah, surfing, swimming. ANDREW HUBERMAN: So those three categories-- maybe we could call those bin A, B, and C for sake of today's discussion. I think if you're willing to embrace-- ANDY GALPIN: Yeah, I love it. ANDREW HUBERMAN: --I think that will be informative toward our listeners in a way that-- simply not assuming what people's different goals are might not be able to accomplish. Said differently, hopefully, by doing that, people will derive a lot more from the description of the program that you're going to give us. ANDY GALPIN: Love it. ANDREW HUBERMAN: Now, I am certain that I want to let you return to your list of the five things that people need to consider when establishing an exercise program. ANDY GALPIN: Yeah, great, let's do that. I also do want to acknowledge a point you've brought up. Exercise doesn't mean just lifting weights. That's my background. That's what I spend my time on. So I sort of default to examples in that category. But it doesn't have to be that. You've articulated plenty of other ways where you can get amazing forms of exercise that have nothing to do with lifting weights. So for those folks in-- was it bin C or 3? I can't remember it. ANDREW HUBERMAN: Bin C. We go A is, again, muscle, lose fat, be healthy now and forever. Bin B is get stronger, gain muscle, don't damage your health, but not really focus on health in the immediate term. And then bin C is want to play or do endurance type activities and, quote unquote, "feel strong doing it," so have more vigor to be able to do that longer and maybe with more attention to skill, et cetera, and, of course, also want to improve their health. ANDY GALPIN: Well, what you've effectively done is you've given us three different avatars with three different goals. So the next step for each person or group is going to be to identify their defenders. But before we get that, we've got to close the loop on this SMART thing. So in each case, they have either chosen that goal based on their personal preference. Or perhaps they did our fitness testing protocol and realized they need to gain strength. So whether the reason they chose to be in buckets B or A or C was because of our protocol or just

personal preference. It really doesn't matter. They still want to go through this process of laying out their goals and making sure, again, they are specific. So let's go through bin C, which is a great one. So you want to have more energy. And you want to feel stronger when you're doing your kiteboarding. You want to feel stronger when you finish your round of tennis, round of golf, game of tennis. OK, great. That's a different strength. Absolutely see, I hear, I know what you're saying though. Amazing. So that goal needs to be specific to that. So it would be hard to make a goal like, I want to feel better at the end of my round. Boy, that depends on too many other factors. A better goal would be something like this. I want to be able to run this 2-mile loop that I do around my neighborhood. And I want to do it and have a lower heart rate at the end. Or I want to be able to get my heart rate recovery back faster. Amazing, that will probably align with you feeling, quote unquote, "stronger" with it. So I did the same course. And either I could do it at the same speed and it's not nearly as hard or I can go faster, whichever one. It doesn't matter. But that would be an example of a specific goal. The other buckets you laid out kind of already have specific goals, like I want to get stronger. Well, that's going to be the goal. The other one is going to be, I want to lose some fat. The goal is sort of implicit in that. It's the other people where you're just like, I don't really care about that. I just want to be able to surf the great waves and then not feel exhausted afterwards. All right, cool. Well, then you still should pick a metric that is not that activity maybe because it won't be within your control, depending on the waves and the temperature and all that stuff, that you can use as a proxy to say, if I were to do something that represented me feeling probably better when I surf, what would that be? And it's not perfect. But it would be still as specific as you could get. You still want to make sure it's measurable. Again, this example might be something like you're going to go to the pool and time how long it takes you to swim 800 meters or something. It's attainable. And then you'll set a goal that's realistic and timely. I'm going to improve by 5% in the next two months. OK, cool, that probably falls in the realm. And then you're making the assumption that if you did that, you'll probably feel better when you go out to do your primary activity, which is, say, surf. The reality of it is every time we work with an actual athlete, that's what we do. Athletes don't come to us to lift weights. They don't come to us to get stronger. They come to us because they want to play better. And they want to stay on the field more. What we're trying to convince them of is if you do this thing in the gym, then that should translate into you being better at your sport, recovering faster, being less injured. But it's still just a proxy. And so that's all you're doing with these other

non-specific goals, especially when they're performance based goals. And we didn't package it that way. But that's really what you talked about for bin C there. It is a performance based goal. I want to be able to perform when I'm in the field. In my brain, that's a sport. In your brain, it's when you're at yoga class. It's the same thing. We've said this earlier in our series that if you have a body, you're an athlete. I want to prepare your body so that it can do exactly what you want it to do. You then get to have the choice of what you ask it to do. You call it a sport. You call it your Saturday hike with your family. I don't really care. It's the same thing.

00:48:02 Tool: #2: Identify Your "Defender", Quadrant System, "Drop Everything and..."

You get control of your body performing the way you want it to perform. And that's what this whole thing is about. Great. So now that we've covered, I think, as much as we need to regarding assessing and choosing a goal, I want to get back to this idea of identifying your defender. So you really need to think carefully about what is stopping you from hitting those goals. And so you're forecasting a little bit. You're also going back into your own personal history. Do you have history of knee pain? Do you have a history of working too much? Do you have a history of a lot of travel? Do you have a history of getting sick a lot? What are these things that are happening that are going to stop you from hitting your goal? A couple of examples I've already laid out so we don't need to go too much longer here. But in the case of somebody who is in maybe bin A, which is I want to lose some fat, maybe gain a little bit of muscle, OK, what's stopping you from the strength and conditioning side? Is it the fact that you can't train consistent enough? Is it the fact that when you go to train, you don't know what to do? Is it the fact that when you go to train, you train your ass off and you're not getting results. OK, great. All three of these different scenarios are going to result in different programs because they have different reasons you're failing. And that is really critical. Instead of just going I want a fat loss program and picking one up off the internet, it may not actually be addressing the point of failure for you. So the sooner you can choose your programs based on why you're failing, the sooner you'll start getting results. You have to run a little bit of a critical analysis there. And it can be something scientific. And it could be a measurement. And it also could just be thinking about you've tried this in the past and why didn't it work. It wasn't that interesting. OK, tell me more about why it wasn't interesting. I'm not really into machines. And that's all I had. OK, great. Or I loved it. I loved the gym I was at. And

I was getting results. But it was so far away. OK, interesting. Why did you stop before? Why didn't it work? Or if it did work in the past, amazing. Let's go back to something similar. But has your life changed at all? Is there anything different about now than when it worked three years ago? Yes, no. If not, maybe we run it right back. If it is, OK, we're going to predict those things. And you want to work-- effectively, what I'm saying is throughout this entire 10-step process is going to be you want to make sure that there are the non-negotiables that are in your life that you know are going to be ahead of your fitness program. And you want to work with those things, not against them because life will win. When it comes to your children, when it comes to your job, life is going to win. You're going to have to give up something. It's going to take some hard work. But we want to fight the right battles for most people. Even for our professional athletes, we get this all the time. It's just like they have nothing else to do but train. Like, whoa, whoa, hold on now, they're getting traded. They have agents to deal with. They may not have a contract. They have families, blah, blah, blah. Life will get in the way, I promise. And so you want to fight the battles that you can win, not ones that you're going to lose. And so that's really what this game is about. So if the battle is, hey, my job is super hectic, OK, great. We're going to come up with a different strategy that's more flexible maybe. I'm still going to hold you to the fire. I'm not going to be easier on you. But we're just not going to try to set up a situation where you have to do this workout Monday, Wednesday, Friday, and Saturday because you know your job is on the road. And you're to provide all income for your family, whatever the thing is. That's what we really want to identify. So when I say identify your defenders, you need to run a little bit of a critical analysis on this. And a little bit of a tool I'll use for this is a modification of another system I stole from Kenny Cain, which is what we call the quadrant system. So you can imagine everything in your life goes into one of four buckets. Now, bucket 1 I'm just going to call business. And this is anything to do with your job, income, sort of all those things. Bucket 2 is relationships. So, again, this could be family or love life, anything that we would call relationships-- social connection, purpose, anything, right? Bucket 3 is your fitness. And bucket 4 is your recovery. So one of the first steps we take is we walk through this. And we say, all right, you have 10 points total. And you get to distribute these 10 points across the four areas. So not 10 each, you get 10 total. And so we walk through. And we say, right now, where are you giving your points? And we could do this right now for you if you'd like. Or I could make up a scenario. You want to do it? ANDREW HUBERMAN: Sure. ANDY GALPIN: Great. So, Andrew, right now in the last month, if you had 10

points total in those four categories, where would you be distributing the most points? Which category? And how many points would that be? ANDREW HUBERMAN: Business, my work. ANDY GALPIN: Business, work job, sort of all those things. And how many out of 10? ANDREW HUBERMAN: Which doesn't, I should say, ever quite feel like work. Running a laboratory and doing the podcast doesn't ever really feel like work in the traditional sense. But it's career. It's work. It involves relationships. But it certainly doesn't enhance my fitness except of my vocal chords and recovery. So with those notes there, I would say 4 to 5. ANDY GALPIN: You pick. ANDREW HUBERMAN: 5. ANDY GALPIN: 5, fair. That's the most common number, business 5. ANDREW HUBERMAN: Great. Once again, I'm typical, which makes me happy. ANDY GALPIN: You nailed it. ANDREW HUBERMAN: One of the few ways in which I've been accused of being normal. I pick 5 for business. ANDY GALPIN: No kidding. What's the next highest? And what's that score? ANDREW HUBERMAN: I do invest in relationships. I would say does it have to be around-- can it be-- ANDY GALPIN: It has to be a whole integer. ANDREW HUBERMAN: A whole integer. 2. ANDY GALPIN: 2, all right, we're 7 out of 10 here. So would you say it is fair that you spend roughly 2 and 1/2 percent of your-- it's not necessarily time. It's energy, time, focus, and sort of all of these things-- 2 and 1/2 times as much on your business as you do in your relationships? ANDREW HUBERMAN: It varies, depending on what's going on. It feels a little skewed in the direction of business. So I might want to adjust to a 4 to 3 ratio there. ANDY GALPIN: Maybe not. ANDREW HUBERMAN: But I think I'm going to hold to 5, 2, business, relationships. And then, just for sake of example and because this doesn't seem like an exceedingly precise measure, it can have some slop. ANDY GALPIN: Of course. Where would you put fitness and recovery? ANDREW HUBERMAN: I definitely put energy into fitness. So I'm going to give that also a 2. ANDY GALPIN: Yep, which leaves? ANDREW HUBERMAN: 1 for recovery. ANDY GALPIN: Great. That what you just laid out is, again, the most quintessential split you could have. In fact, you run this game on everyone, they're going to come up with basically the same answer unless they don't work out or whatever. So a couple of rules here. Recovery must be at minimum half of your fitness allocation. In your case, 2 to 1. You're fine. ANDREW HUBERMAN: I think I'm going to say it has to be half. It has to be 5 out of 10 points. ANDY GALPIN: No. ANDREW HUBERMAN: In which case, it doesn't leave much for anything else. ANDY GALPIN: I would like it to be minimum 20% of the total, which means 2 out of 10. Now, when I say recovery, I don't simply mean muscle. I mean you need personal time. You need meditation. You need--

ANDREW HUBERMAN: Sleep. ANDY GALPIN: --sleep. You need to go to a concert and get out and see people. And so like whatever the things that give you energy back. Some folks, that's personal time. Some folks, that's social time, whatever that means to you, right? ANDREW HUBERMAN: Yeah, I actually get a lot of energy from my work. And so that's why some of these numbers are a little bit-- you can kind of cloak the underlying dynamics. ANDY GALPIN: So here's what we do from this game. We look at that and we say, if that's our split, Andrew, 5, 3, 2, 1-- ANDREW HUBERMAN: 5, 2, 2, 1. ANDY GALPIN: 5, 2, 2, 1. ANDREW HUBERMAN: I'd love to be able to put 3 in relationships just because. But then they need 11 out of-- ANDY GALPIN: Right. So here's the fun game we play. You're currently at this. And you don't get to add to 11. You have to stay at 10. Your 10 is different than my 10 maybe, right? But 10 is 10, or just-- whatever the maximum you can actually do. It's you. So if we went back to our training goal, whatever that goal was for you, and we went back to our defenders, we would look at this score now and say, is 3 out of 10-- fitness is 3, right? ANDREW HUBERMAN: Fitness is 2. So it's 5, 2, 2, 1. ANDY GALPIN: Is 2 out of 10 sufficient to hit that training goal in that time frame you described? And let's say you said, I want to hit a new PR in my mile six months from now. ANDREW HUBERMAN: Yeah, for simplicity's sake and also because it's largely true, I'm going to put myself in what I refer to as bin A earlier. My body fat percentage is OK. It's in the range that I would like. But I would like to bring it down a little bit, probably gain a little bit muscle here and there, keep or gain some endurance. And, certainly, certainly, my immediate and long term health are extremely important to me. ANDY GALPIN: Great. So then the question, and the answer maybe yes, that this is the optimal split for you. If it is not, then we have to make a choice. We either alter the goal or the timeline to make it realistic or we alter our quadrant. And then if we're going to alter our quadrant, the next step is critically important. We need a list of very specific life actions that we're going to take that allows that split to happen. So if you said, for example, I want to put three into relationships, great. What specific life actions are you going to take to pull one from fitness-- you can't pull any from recovery or one from business. And you don't have to actually answer. This is-- ANDREW HUBERMAN: Too personal. ANDY GALPIN: I know you don't like making these things about you because-- ANDREW HUBERMAN: Right, that's the other reason to do it. And it is a diabolical trick to insist that these be whole integers because I would have done like a 4.5 for business and a 2.5 for relationships. But, obviously, you write the rules on this, not me. ANDY GALPIN: So you would just walk that list. And the list could be something

like I promise to not work after 7:00 PM Thursday through Sunday or whatever the thing is. I promise I'm going to make sure that I don't start work before 8:00 AM or blah, blah, blah, whatever. No more trips. Just make those things specific and measurable, not just like I'm going to work less. That's never going to go-- what is the very specific life action you're going to take? There's going to be alarm that goes off Tuesday night at 4:00, 5:00 PM. And no matter what we-- at Barbell Shrugged, we used to have a little shirt that was like D3AT, which is like drop everything and train, which means at 3:00 PM in the afternoon, no matter what's happening, we dropped everything and trained because that was like when you start a business and you're going, things just run away from you. And it is just sort of like, man, it's not my company. But those guys are like, we are a strength and conditioning company. And we're not training. So we had to just make this hard rule. And it was just like a little thing that came up. And it was easy to say drop everything and train 3:00. There you go. ANDREW HUBERMAN: I like this drop D, E everything, A and, blank, like it could be drop everything and-- ANDY GALPIN: Correct. ANDREW HUBERMAN: --pick your favorite. ANDY GALPIN: Totally. Drop everything and read. ANDREW HUBERMAN: Pick the relevant-- read, yeah, absolutely. I really miss reading for pleasure. I would put that under recovery and-- ANDY GALPIN: Drop everything and breathe. ANDREW HUBERMAN: Oh, and breathe you are saying. Oh, and breathe. I was saying read. ANDY GALPIN: I said that too. ANDREW HUBERMAN: Yeah, because for me, reading is actually is both recovery and relationship. Because oftentimes in my relationships, I've insisted-- not insisted. I certainly didn't insist. We've had a format of reading the same book in parallel. ANDY GALPIN: Oh, great. ANDREW HUBERMAN: Yeah, not necessarily side by side but the same book in parallel and then discussing it. It's a wonderful practice or listening to the same audio book. ANDY GALPIN: Yeah, it works well. You can do drop everything and play. You're just going to go do something. You're going to play video games. You're going to go play with your kid. You're going to-- do you want to play with your dog? It doesn't even have to actually be play. But play to you could signify personal time. It doesn't really matter. So, yeah, that's it. ANDREW HUBERMAN: I really like this drop everything and blank category that you probably shouldn't have more than what? Two or three of those overall? ANDY GALPIN: Pretty much one to two maybe is where you want to go after that. ANDREW HUBERMAN: So the idea is then to redistribute the numbers on this list but through a very concrete action. And I like this drop everything and blank because it speaks to the non-negotiable aspect of it. ANDY GALPIN: Has to be. Life will get pushed. ANDREW

HUBERMAN: It's not a fine time to-- it's not in next year I'm going to-- ANDY GALPIN: Correct. ANDREW HUBERMAN: I love it. ANDY GALPIN: Yeah, yeah. When you put those things-- those things, you might as well just don't even put it on your list right. It's not going to happen. ANDREW HUBERMAN: Yeah, you're talking to somebody who loves rules. Because when they are non-negotiable rules, they provide this incredible organizing force for the brain. It's really a neuroscience thing in my mind. ANDY GALPIN: Totally. ANDREW HUBERMAN: And, actually, we did an episode on happiness where you find that once people make a decision, if they eliminate the possibility of other decisions, like, literally, the hatch is closed, that is it-- ANDY GALPIN: Burn the boats. ANDREW HUBERMAN: --the rates of subjective happiness, immediate and long term happiness, over time go way, way up. And so I'm convinced that the nervous system doesn't like to keep the valves on these dopamine circuits open. I actually think it diminishes from the reward component. And there are actually some data on this. Anyway, I don't want to take us off track. ANDY GALPIN: The last part of this, what we do then is we take that quadrant. And we take that list. And then you're going to print it physically. And you're going to put it in two places. This could actually be on your phone. You don't have to print it. You can screenshot and be the background of your phone. So every time you click on your phone, you immediately see that quadrant. It's a very clear reminder of like, what are my priorities today? Just a simple little picture. I also like to put it in your place of failure. So for a lot of people, that is like on their laptop or right above their workstation. It's the thing that's going to lose and beat your fitness is your job-- typically. Or it's on your TV, it's on your Netflix control-- no, sorry, Netflix, no offense. But you know what I mean? It's whatever the thing is that you fail for. I play too many video games. Great. I work too much. OK, great. And you put it there. And you put it also-- the last component is-- it has to also be in the hands of somebody who can hold you accountable. Wife, training partner, business partner, whatever. So it's like, hey, Andrew, you promised you were going to do x yourself. Why are you still here? You committed to this. You've got to get out of here. Someone who will be like, no, no. It's drop everything and read. It's 8:00. You're supposed to be reading. You got to go. You're going to check back in on that. Check back again every week. Check back in-- it doesn't matter, every month. And then, you can adjust. That's fine. You can always change the system. But that has to now change. You've got to print a new one. And now it's a whole new promise you've made to yourself. So you've got to be able to hold yourself accountable to those things. It's got to be flexible enough to where it's realistic. It can't

be, I'm not going to work after 6:00 every day. Maybe it's just three days a week. Maybe it's, on Saturdays I promise to work for the first two hours so I don't work Saturday night. Or whatever, or the inverse, I'm not going to work Saturday-- you get it. You could come up with a million examples here. So that's the system we use to make sure that we have now properly identified where we're going. We found a roadmap to that. And now we know exactly how we're going to stay on track. I have to take this opportunity to add one more thing to our drop everything list. And you gave the example of DEAR, which is maybe drop everything and read, or drop everything and relax. Or another example, I have to add a DEAL, which is drop everything and-- this is for you, Lex-- love. ANDREW HUBERMAN: Actually, one of the advantages of having a dog or having children is that the drop everything and love is often enforced by the faces of those that you love.

01:04:33 InsideTracker

They just show up in whatever space you happen to be in. ANDY GALPIN: Especially if you work from home. ANDREW HUBERMAN: I'd like to take a brief break to acknowledge our sponsor, Inside Tracker. Inside Tracker is a personalized nutrition platform that analyzes data from your blood and DNA to help you better understand your body and help you reach your health goals. I've long been a believer in getting regular blood work done for the simple reason that many of the factors that impact your immediate and long-term health and well-being can only be analyzed from a quality blood test. One issue with a lot of blood tests and DNA tests out there, however, is that you get information back about various levels of lipids, and hormones, and metabolic factors, et cetera. But you don't know what to do with that information. InsideTracker makes knowing what to do with all that information exceedingly easy. They have a personalized platform that lets you see what your specific numbers are, of course, but then also, what sorts of behavioral do's and don'ts, what sorts of nutritional changes, what sorts of supplementation would allow you to bring those levels into the ranges that are optimal for you. If you'd like to try InsideTracker, you can visit [InsideTracker.com/Huberman](https://www.insidetracker.com/Huberman)

01:05:35 #3: Goal Timeframe & Life Events; #4: Weekly Training Frequency

to get 20% off any of InsideTracker's plans. Again, that's [InsideTracker.com/Huberman](https://www.insidetracker.com/Huberman)

to get 20% off. ANDY GALPIN: Let's move on to the next one, shall we? Number three here is going to be what I call calendar or time frame. So it's going back a little bit and saying, you've decided on this goal and you've identified the defenders. Now we need to come up with a realistic time frame for how long it's going to take to accomplish that goal. And when you do that, you need to look at your life schedule. And what I mean by that is do you have important deadlines coming up? Do you have a holiday? Do you have a trip? Do you have travel? Do your children have something coming up? You need to take all that information. And I literally lay out a calendar. And I write all those dates in a physical calendar first. And the reason I'm suggesting this is you want to work your training backwards around that. As we've been discussing, life will win. If you try to plan a training program that is five days a week 90 minutes a day, and all of a sudden, you look two weeks from now and you realize you've got a grant deadline. And then you've got to take two days to go to Austin. It's just foolish. You're going to fail. And then you're going to quit. And you're going to be like, man, again, my training program failed. So you need to figure out what are the non-negotiables are in that business quadrant, and just not be foolish. So let's imagine you're going to plot out, say, a 12-week training phase. And you want to-- you've decided on this goal. And then you look and you realize in the middle of this 12-week span, week five is really hectic and chaotic. Or you realize that this is a quarter in which something important is due. Maybe we want to either adjust the goal. Or what we really do in this step is going on to actually step number four, which is choose the number of days per week you can exercise and the length in terms of amount of time you can truly afford to train. I would rather you underestimate that than overestimate it. So you, again, you look at the calendar. You put all these non-negotiables, the deadlines you cannot move in the calendar. And then you say, look, based on this, realistically, I can conservatively train three days a week for 60 minutes total. And that includes the time I walk into the gym, my warm-up, my down-regulation breathing at the end, and then me getting back either in the shower and back. Because really, now it's maybe 90 minutes by the time you traveled, you transitioned, you picked back up on work, you showered, you ate, et cetera. That time just runs away from you. And all of sudden it was a two and 1/2 hour thing even though it was a 45-minute workout. So you really need to figure that thing out. If you're a few weeks in and you realize, ooh, I actually have a little more time than I thought, you can always train more. You can do another thing. You can add up. But what you don't want to do is set up a program that is requiring you to do certain exercises on one days or certain styles of

training on another, and then you constantly miss one of those days. I thought I could do four days a week, but one day a week something's getting pulled out. That's just going to keep you off schedule. It's going to make you feel like a failure. And you're going to run into problems with your training. So schedule three if you're sure you can get three. And if there's an extra day, we can always do other fun stuff. So that's really step three and four. Figure out your life events over the course of this time. How many days a week can you train? And then how long in terms of minutes per workout. Notice, we haven't selected a single exercise yet. We haven't worried about how heavy, rest intervals, all those modifiable variables. You don't need to pick those later. First, where are we going. Second, how are we going to get there, which is the quadrant and identifying of defenders. And then the third is, what are the restrictions I need to place on myself in terms of program design based on how often and how long I can work out. That is going to allow you to go back to some of the previous episodes and go, man, you gave us all kinds of ideas. How do I know which one to choose? This is your answer. You're going to choose based upon the limitations of time and frequency. So if you've already said, we're in-- let's imagine we're in bucket A, or bucket C. It doesn't matter. And you go, look, the most I can afford with where I'm at with what's going on in my life is three days a week. Well, we automatically know we're going to have to start training-- choosing a training style that's limited to three days a week. Don't even worry about the four or five day stuff. Those are off the table. And now we're on-- so we've placed restrictions. It goes back to that concept of I think it's one of your podcast's guests, Jocko. It's just like, hey, structure gives us actually some freedom. So by creating some restrictions here, we're a little more free to go, I only actually have to choose between A and B. Rather than sitting down and going, man, there's all-- I'm 20 hours into this exercise podcast thing. And there's so many options. Which one to pick? Well, you create a little bit of restriction. And now it's easier to go, oh, my only option is A or B. And there we go.

01:10:33 #5: Exercise Selection, Progression

ANDREW HUBERMAN: So that's number four. ANDY GALPIN: That's three and four. At that point, once we're good there, now what you want to do us go to step number five, which is actually select your exercises or your movements. And this can be as simple as selecting a kettlebell swing, or running, or swimming. It could be your entire exercise mode. What you want to do with exercise selection here is make sure that you're

balancing those exercises across the whole week. Not within necessarily every workout. So if you have four days a week, five days a week, you want to look at the exercise selection and say, OK, I need to have somewhat of a reasonable balance between movement patterns, or muscle groups, or front and back, side to side, however you're thinking of it, just across that week. So again, say we're on a three-day program. And we're in either of the buckets-- any of the buckets, really. And we say, OK, great. Maybe it's not ideal if all I select is cycling every day. That's not a lot of balance. I don't notice anything. There's no upper body work there. There's no torso work. There's no other positions. So maybe I'm going to really focus on cycling. So I will do only cycling two days a week. But that third day I need to pick something for the other movement areas. And that's going to make sure you stay in a reasonable balance. If you have an exercise that you like, great. If you have exercise you have access to. Again, maybe the gym is a giant pain in the ass. And so you can say, look. That's too far away. The closest one is 45 minutes there and back. So maybe I'm going to restrict myself to only kettlebell, and bands, and running, because I can do those in my house. Awesome. We've actually created some freedom because we gave ourselves some restriction. And now we just have to figure out how am I going to give some movement patterns somewhat balanced across my three days. So really, when it comes to exercise choice, it is selecting the patterns that you know how to execute. Giving yourself, again, somewhat of a balance between the muscles, and the joints, and the movement patterns. Making sure that you are specifically targeting any muscle group or movement that you want. So making sure you want to improve muscle size in your glutes, you better make sure some of the exercises you're doing at least one day a week you're feeling in your actual glutes. So you can check that box. It doesn't have to be every exercise. It probably shouldn't. It doesn't even have to be every single day. But make sure it's checked off somewhere on that list. And the last one is, is there a strategy in which you can progress it? So if you're like, I'm just going to do bodyweight exercises. OK, great. Well, how are you going to progress those? In the case of bodyweight, it's really hard to add load. Maybe you can put a weight vest on or something. But then, maybe you don't have that, or that's an extra thing, or that can only go so far. So what's my progression strategy going to be? Well, in this case, maybe you just increase the complexity by going from two legs, like say a bodyweight squat, to a single leg squat, or you just increase repetitions, or you increase time you're going to hold it. My point is, your progression strategy will be based upon the restrictions that you place based on availability and things like that. The last

thing I always recommend here in terms of exercise progression, to make sure that you can continue to do these things while lowering your risk of injury, both in the short-term and long-term, is to progress your exercise complexity in this fashion. So make sure, number one, you can do the exercise properly with assistance. So let's imagine a scenario where we're going to try to squat. So give yourself-- put your hands on a bench or something like that. Now, can you execute that squat perfectly with assistance? So you're holding onto something. Great. If you can't, then don't progress past that. Don't go now to a barbell back squat if you can't do it correctly when you have assistance. But let's assume most people can do that. OK, great. Now you can move on to the next step, which is can you do it well without assistance. So this would be bodyweight only. Check, cool. We're good there. Now you can go ahead and move on. Can you do it well with an added e-centric load? So in this particular case, if we're learning a squat, we can do it well when I hold on to something, that's great. Now I can do it well with just my bodyweight. Now if I put a little bit of weight on, whether it's a kettlebell in the front like a goblet squat, or dumbbells to the side, or whatever you want to do, can I lower it and go all the way down and stay in perfect position? If you can do that, great. You're allowed to go to the next step, which is can you hold it isometrically. So can you go all the way down and then hold that bottom position? What you don't want to do is start adding load, or speed, or fatigue if you're going down to the bottom position of the movement and you are out of control. We really want to avoid this. So I want you to show me you can go down and you can lower the weight under control. You can hold it in that position under control. If we're clear there, now we can add the concentric portion. You can now go ahead, you can lower it, you can hold that position of most danger, and now you can move up at whatever speed we want. We are all good there. Once you can show me those things, you can add the last two steps which are now speed-- if you choose to-- and the last one, which is fatigue. I would really discourage people from doing exercises to fatigue, especially with a moderate or high load, unless you can promise me you can do these first six steps. If you can, you can basically go hog wild with your training, and your chances of injury are very low. Again, both acute injury, as well as long-term injury, which is just sort of like my joints ache, and all of a sudden my shoulder hurts, and things like that. That's really what I'm looking for. And once you're clear there, you can train pretty hard. ANDREW HUBERMAN: I really like this. Because, recently, I was showing somebody how to use a-- in this case, it was a hack squat machine. I notice they were very timid of getting into a deep squat position. And they cited a previous knee

injury, which has long since healed. ANDY GALPIN: Right. ANDREW HUBERMAN: But even with proper foot placement and everything, you just tell, they were getting ginger about it as they approached that bottom position. But over time, with pauses at the bottom, they've become very comfortable. And now actually are going well below 90 degrees angle between femur and lower leg. ANDY GALPIN: Excellent. ANDREW HUBERMAN: So it was clear that it wasn't something range of motion limited or it was just-- it was a mental thing, but a logical one for them. Now, after what you just said, I think a better strategy that I could have used would have been to have them get into that position, just no weight at all, maybe nothing on the sled, and then slowly working up from there as opposed to doing what we did in our case, which was to just convince them that they were much stronger than they thought they were. We eventually got there. But I'm realizing that there was far too much mental anguish involved in that process. ANDY GALPIN: Yeah. This whole progression, by the way, this can all happen in one session. If you can check the boxes. In that example, you may have been fine to jump there. It may have just been a, hey, you're fine here. Get through it. Oh, OK. This whole progression might take two years. I mean, this really depends on your background, if you actually have injury history, your comfort, your confidence, all these things. So you don't need to worry about rushing through that progression. You don't even need to get all the way to the end if you don't want, especially with speed and things like that. But again, it can happen. It doesn't have to be like, well, it's a month of this, a month-- well, no. If they feel great and you can go

01:18:20 #6: Exercise Order, Identify Friction

through one to seven in five minutes, then you're good to go. ANDREW HUBERMAN: Number six. ANDY GALPIN: Number six now is just order. So you know how many days per week you're going to work out. You know how long they're going to take. You've selected all the exercises you need to get done. You've balanced that across the week. Now you just need to put them in order. And the easy answer here is generally do what's most important first in the workout. There is some minor interference effect of some other things there. But the reality of it is, if you do the priority first, you're probably going to be OK. So whether this priority is a muscle group. So in the example, you want to make sure your glutes get trained. Maybe do it first. If you're trying to maximize your back squat, you may not want to do a bunch of glute exercises to fatigue first. But that's

not the priority we picked. We picked a different one, which is buckets A, B, and C. OK, great. By doing it first, you told me the priority was to make sure I do something for my glutes. And then I would also like to get my back squat a little bit stronger or whatever. Fine. The same thing could be done for your endurance training. You could do your endurance training before your lifting if you understand that that means you might be compromising your lifting quality of the workout a little bit. But you might be fine with that if you say the endurance work is more important right now. Amazing. You don't know the answer to that though if you hadn't gone through steps one through four. And that's why those things are critical. So it makes what we call chaos management, which is things happen in the moment. I don't know what to do. What should I choose? That decision becomes really clear because you can always go back to the beginning of my priority was this. Then therefore, that's my choice today. So it provides a very simple set of instructions for when the workout gets cut short, when your workout has to be in a hotel, and any number of things that pop up in real life, whether, again, you're an athlete or non-athlete. Either way, life will get in the way at some point. So you need to have rules and a system that says, when this happens, I go right back to this. And that's my choice. Done. I'm moving on. No decision to make here. It's already been determined a week ago, five weeks ago. We're often rolling. So the order, again, is pretty simple. Just put the one that is most important first. Now, I know you like to do legs on Monday. That's great. I actually love that too. I do the same thing generally, because to me, that's almost always the most important thing. If I miss a bicep workout, I'm probably fine. But I really don't like missing the big movement pattern. So I make sure that those happen on a day that tend to be more stable for me. Mondays are generally pretty stable. Things get chaotic as the week moves along for me. Others might be the opposite. Others might want to go, hey, I'm actually going to keep Monday as my flexible day or off day because I like to get a lot of my work done, get that cleared so I can have-- oh, sure. Work it around you. Some people love to train on Saturdays because it's their most free, some people hate it. Sure. You tell me, what is the biggest priority, and what are you the most fresh? Monday, Tuesday, it doesn't matter. It depends on your work schedule. Maybe you work the weekends. I don't know. You decide what day of the week are you generally the most consistent, the most consistent schedule, and the most consistent energy. And do the thing that is most important on that day. It doesn't matter Monday, Tuesday, day one, day three. We were sort of talking about this earlier. But you actually don't even have to do a week schedule. Our brains tend to like to go year, month, week.

But a lot of folks will even just run this thing in terms of a seven or nine-day schedule. In fact, we ran a nine-day training schedule for one of my Major League Baseball players. And he's eight or so years into his career. And he's hitting all-time PRs in velocity. And he's very, very good. And it was a nine-day training cycle. And we ran that for the entire season. So it doesn't have to be a seven-day split. But it tends to work for a lot of people because most people have a fairly consistent schedule across the seven days. So pick the thing that is most important and do it first, and do it on the day of the week that is most consistent for you in terms of schedule and energy. ANDREW HUBERMAN: I really like what you're describing. I should just say that one of the reasons I put legs on Monday is because I tend to get enough sleep on the weekends. I generally get enough sleep during the middle of the week. But oftentimes, things will come up. I can be pretty sure, however, that I've, quote unquote, caught up on my sleep on the weekends. This notion of catching up on sleep is a little dicey scientifically. ANDY GALPIN: Yeah. ANDREW HUBERMAN: But I tend to be pretty rested by Monday morning. ANDY GALPIN: Right. ANDREW HUBERMAN: And actually, my week begins on Sunday. And Sundays are when I get my long form cardio. ANDY GALPIN: There you go. ANDREW HUBERMAN: So those two are really non-negotiable. And the reason that long form cardio is on Sunday is that it can take many different forms. It can take a hike with a weighted vest. It can take the form of a jog. It can be done with other people. It can be family time. It can be time with friends and so on. And that's pretty hard to do during the middle of the week or pretty hard to ensure, at least for me. I also find that by bookending the week with some non-negotiable days of training on Sunday, Monday, then if the week gets busy Tuesday, Wednesday or even sometimes Thursday with travel and things like that, one can catch up toward the weekend. It's not ideal. ANDY GALPIN: Yeah. ANDREW HUBERMAN: I mean, ideally, it's spaced out. But really, this isn't about what I do. This is really just to underscore the principle you described, which is, I have a very clear sense now over three decades or so of training and three decades or so of being involved in academics, and science, and work, of when I tend to be most rested, when I tend to have some flexibility in my schedule. And also, when I'm trying to combine fitness with some of my social engagements, which is actually quite fun. One thing I note is that the four boxes that you mentioned before, work, relationships, fitness, and recovery. Some of them do have some crossover. ANDY GALPIN: They all do. ANDREW HUBERMAN: A hike with family or friends is both relationship and fitness, and so on. But I love the principle. Because anything that can add consistency, as you

pointed it out, is going to greatly increase the probability of reaching one's goals. That's sort of an obvious one. But in an earlier episode you also said something that I wrote down and is really still ringing in my mind, especially now, which is that consistency always beats intensity. ANDY GALPIN: Correct. Yeah, absolutely. We used to do a thing-- when I was training NFL players for the combine many years ago-- where Saturdays were supposed to be the day they came in and we did the most regeneration. So this is when they get body work done. And we do hot cold contrast and sort of all these things. And our attendance was like 1%. Nobody showed up. ANDREW HUBERMAN: For a massage? ANDY GALPIN: Nobody showed up. ANDREW HUBERMAN: Wow. I'm surprised. ANDY GALPIN: Seems right. But remember-- ANDREW HUBERMAN: I love a good massage. ANDY GALPIN: Of course. But remember, you're 18 years old. You're likely to be getting millions of dollars handed to you in the next few weeks or months. And-- ANDREW HUBERMAN: He's not referring to me, by the way. ANDY GALPIN: No, no. ANDREW HUBERMAN: I'm actually quite a bit older than 18. [LAUGHS] And I'm not getting handed millions of dollars each week. ANDY GALPIN: Right. So I would think that. But those folks, they recover super fast. They've never really had that. And also, Friday night, kind of enticing. And so, nothing was there. And the strategy then was, what if we instead of having a important hard training day on Saturday we transition and it is only things they want to do. So we basically identified, what are the things in training you love the most, and let's do those Saturdays. And it turns out for those folks, no surprise here, it was what we call the gun show. So they would come into the gym. And we would literally do nothing but biceps and triceps. They'd just get a pump. And then the deal was though, you come in-- and literally, it would come in is, we would pick three guys. Say you, you, and you. You pick your favorite bicep exercise. You pick your favorite one. You pick your favorite one. You three over there, you pick your favorite tricep, tricep, tricep. And we just run a big circuit. Like this is, how many reps? I don't know. I don't care. How many sets? I don't even care. Just pump away. I don't even care. We chose small muscle groups. Not really going to interfere with much. We're training them for the NFL combine, which is-- it's not a-- it's a legs performance, basically. So it's like, if they smash their biceps and triceps on a Saturday, it's not going to influence what we did on Monday. So recovery wasn't an issue. Once we finish the gun show though, now you have to go do your regen stuff. So if you need chiro work, you need physical therapy, whatever you're going to do. So we would get them in the building with the low-hanging fruit. And then we would actually get

them to do their work. You can do the same thing. And I honestly do the same thing. I tend to do either-- if I'm going to do an upper or lower split, I'm going to do that stuff either Friday night or Saturday. Because it's very difficult for me to do a hard long workout Friday night or even Friday morning for that matter. The same thing Saturday. I wake up. And now it's like, it's family mode. It's kid things. I want to do stuff. I want-- man. But I can usually convince myself to be like, all right, just go in there and go 20 minutes and get your upper body stuff done. All right. I can walk myself into that mentally. It's harder to walk yourself into your five sets of five Deadlift. It's sort of just like, whoa, I ain't got that in me right now. My high intensity intervals, the max stuff, I don't have that right now. So I'll either go for my long steady state stuff, which is like, I'm going on the bike. I'm riding down to the beach, or coming back, nasal only, I can get myself to go for a bike ride, whatever. So I picked the thing that I'm likely to do on the days where I'm probably going to be my weakest, quote unquote. Not physically, but motivation-wise. For a long time I try to-- it just got stuck in a way where my harder stuff was Friday nights. And I'm just like, why am I doing this? I was having like a 50% success rate. Just like we were having a no percent success rate with the NFL guys on Saturday. So you have to be a little bit tough. You have to grind sometimes. You have to get some motivation and go after it. But you also have to be like, well, this is just stupid planning. Why put yourself in a position where you're just failing over, and over, and over, when I could move it and go, look, those sessions are going to be things that are easier. They don't require as much gusto to get up and get them done. I get those things done 90% of the time. Because the worst case I can be like, all right, we're going to go do a family thing. Give me 20 minutes. I'm just going to run up there and smash upper body. And you don't need-- I need a 20 minute warm-up. [LAUGHS] It's like, I can just jump into those things if I had to. If I feel great, then I can still go do something else, or I could do more, I could do a longer session. But you're sort of immune to any situation. So I would book-end those, I guess, is what I'm saying. What's the day you're going to have the best day, and what's the day you generally have the worst? And put the programs around those situations. ANDREW HUBERMAN: Yeah. I love the idea of identifying the friction points, the high friction and low friction days. ANDY GALPIN: Yeah. ANDREW HUBERMAN: Friction meaning anything

01:29:20 Exercise Timing & Sleep, Down Regulation, Caffeine

that impedes you from training consistently or well. And there are so many factors that ratchet into that-- sleep, other social engagements, work. Friday night, I also find it tough to do any kind of training. I do cardiovascular training. I do interval type training on Fridays typically. But there's a lot of cumulative fatigue and stress that happens across the week. ANDY GALPIN: Right on. ANDREW HUBERMAN: And usually, for a long time, gosh, more than a decade now, I've been telling myself that Saturday is the day that I try to reduce my cortisol as much as possible from the week. ANDY GALPIN: There you go. ANDREW HUBERMAN: And then Sunday is the day that I enjoy that low cortisol state. And that's actually what opened up into the long, slow run. ANDY GALPIN: Amazing. ANDREW HUBERMAN: I actually like to think of myself as a bit of a mule during those long runs. ANDY GALPIN: Yeah. ANDREW HUBERMAN: I actually have a shirt that has a sloth on it that I wear to remind myself to go slowly on those runs. Not that I ever run that fast. But there's the whole mindset around it is to be a bit of a mule, just kind of moving through it. And the fatigue factor is more one of at first there's just a little bit of boredom. But then, I've noticed, there's a whole different set of mental scapes that open up under different training types. And this is maybe something we get into a little bit in a future episode or discussion. When you train really intensely for short periods of time one way, your mind goes into a particular state. When you do long duration training, you're thinking and indeed even the way it affects sleep patterns is also very different. I think one of the great futures for neuroscience and exercise science in collaboration is to identify how different patterns of physical movement relate to different patterns of thinking and vice versa. ANDY GALPIN: Amazing. ANDREW HUBERMAN: Anyway, something maybe to just earmark for a future conversation. But there's clearly a relationship there. ANDY GALPIN: Yeah. Well, when we certainly know of a pretty clear relationship between even what we would classify as zone five exercise and deep sleep. ANDREW HUBERMAN: So a zone five again being you're breathing a lot through your mouth because you have to in order to bring in enough oxygen to offset the acidity created by-- [LAUGHTER] ANDY GALPIN: The carbon. ANDREW HUBERMAN: Exactly. ANDY GALPIN: Yeah. This is the high heart rate. So I mean, if you're going to look at it and hit a number, looking for something like 30-plus minutes a week being in the top 10% of your heart rate. ANDREW HUBERMAN: That impacts deep sleep. ANDY GALPIN: Is going to positively impact deep sleep, as long as it's done very far away from deep sleep. So you don't want to do that at night. So you want-- in terms of time. So if you hit those numbers earlier in the day, oftentimes that will enhance deep sleep.

ANDREW HUBERMAN: Yeah, I was looking at some papers recently. And the number that emerged from those papers was that unless it's low intensity exercise, trying to exercise about six hours or more away from your sleep time would be ideal. ANDY GALPIN: Bingo. ANDREW HUBERMAN: Now, that said, for those of you that have to hit the gym or go for a run in the evening and then are trying to fall asleep four to six hours later, I wouldn't want that statement to impede your regular exercising. ANDY GALPIN: Yeah. there's an easy trick to that. Just finish it with down-regulation breathing. So that's one of our things, that if you-- because that is a realistic situation. ANDREW HUBERMAN: Right. Finish work at 5:00, or even 6:00, and then by the time you're training or running or whatever you want to call it, it's a 7:30, 8:00, you're home at 9:00. You're eating, and then everyone's like, you can't eat two hours before bed. Pretty soon you run into a number of different collision points that make you wonder whether or not you're doing everything wrong or if it's really worth training at all. ANDY GALPIN: 100%. ANDREW HUBERMAN: Now, I would argue it's better to train than not to train. ANDY GALPIN: Yeah. ANDREW HUBERMAN: But provided that you can still get to sleep. ANDY GALPIN: 100%. So you have to walk a little bit of a game. We run into this issue with the NBA players. You're playing games at 6:00 at night that start. Major League Baseball is a 7:05, 7:10 pitch, right? ANDREW HUBERMAN: That's right. ANDY GALPIN: And also, by the way, we're changing time zones every five days. UFC fighters and such, were usually training twice a day. There is no option to train, or I mean, we are training twice a day always. So we have to come up with strategies for that. And there's other non-athlete scenarios, of course, where it's like, there is no other option here. Cool. So what we do is a couple of things. Number one, the further away you can make it from sleep, the better if possible. We do need to train, though, around the same time you're going to be playing. That has to happen. So the harder and longer we go in the training session, the harder and longer we go in our down-regulation post-exercise. And that is, in my estimation, the number one lever you can pull that can help. Now, if it really does start crushing sleep, you're going to have to make a critical decision there. In general, it's not a good reason to not exercise. But maybe you restrict to only a couple of days a week you go all the way up in intensity. And the rest of the days maybe 70%, you stay in this kind of a working zone. Awesome. Maybe it's a longer down-regulation. Maybe there's other strategies you can do. But yeah. You want to be careful of-- and we've had this situation a number of times where it's just sleep complaints, sleep complaints, sleep complaints. We run full sleep studies on them in their house. We do the whole thing with

absolute rest. We come in. We do the whole thing eye tracking, biomarkers, the whole thing. And it's like, oh, you just need to stop doing intervals at 8:00 PM. ANDREW HUBERMAN: And I would add to that, another incentive for being able to train with or without caffeine is that it's very clear that even if you can fall asleep after ingesting caffeine in the preceding hours that caffeine consumed in the, gosh, even 12 but really eight to 10 hours, four hours prior to bedtime really disrupts the architecture of sleep. So if you critically rely on caffeine in order to train, whatever your training might be, and you know that sleep is important for recovery, well, then it's pretty obvious where I'm going with this. ANDY GALPIN: Yeah. ANDREW HUBERMAN: So having that flexibility is vitally important. ANDY GALPIN: Yeah. You've probably also covered this. But you can actually measure that directly. So by eye tracking patterns, you can actually identify the effects that caffeine has on sleep independent of sleep time or not. ANDREW HUBERMAN: Right. There are never positive effects. ANDY GALPIN: Correct. ANDREW HUBERMAN: That said, I am a proponent of caffeine early in the day. And caffeine does have a lot of-- well, it's anti-neurodegenerative. As long as you're not getting anxiety, it's pro-performance, both mental and physical performance. But, of course, if you do not need caffeine, if you're one of these mutants that do not need caffeine in order to go about your daily living with focus and intensity, then, by all means, don't start taking caffeine. ANDY GALPIN: I'm not the hugest fan. I am scientifically. 100% or more. Personally, it does-- I don't do well on it. ANDREW HUBERMAN: Well, you seem to ride a little bit more what we would call a sympathetic tone, shifted towards more alert. I tend to be naturally a bit more like my bulldog Costello was, a little bit more on the mellow sleepy side. And caffeine just puts me right at that alert but calm place. And I can get away with drinking it-- I wouldn't say a ridiculous, but a fair amount of caffeine and remain there.

01:36:24 #7: Intensity, #8: Volume, Progressive Overload, "Deloading"

But I do restrict it until the time right up about 2:00 PM at the latest is really when I were trying to drink caffeine. Number seven. ANDY GALPIN: Great. So number seven and eight are pretty simple. This is now choose the intensity and the volume. So we've discussed those at length in the previous episodes. We probably don't have the time to go back over all those details. So remember the adaptation you're training for and pick the appropriate rep range, total amount of sets, as well as the intensity to then get the

corresponding adaptation. All you have to do is select those things. In terms of progression through a week, the rule of thumb we say for intensity is something around three 3% per week. For volume, it will depend on what you're doing a little bit, but any time you cross more than 10% per week, you're going to start running into problems. So I like 5% better. It doesn't need to be as low as three. You can jump up much more than that. 5% to 7% is better. So if you are doing, say, running, because the numbers make it easy, and you're doing 10 miles per week total. And if you were to go up to 11 miles the next week, great. You're right around 10%. But what you wouldn't want to do is say, I'm running 10 miles this week. And I did maybe four Monday, three Wednesday, three Friday. So four, three, and three, you got your 10. Then you wouldn't want to add a mile every day. So Monday, instead of doing four, I did five. Wednesday instead of doing three I did four. Friday instead of doing three I did four. What you actually did is you went from 10 to 13, which is a much higher jump than the 10% prescribed. So the same thing would be true for lifting weights. The same thing is actually true for calories and trying to add them, et cetera. So the body tends to not handle those things as well jumping more than 10% per week. ANDREW HUBERMAN: So keeping with this idea of increasing progressive overload, being 10% more over some period of time, am I correct in assuming that I want to identify one, maybe two meaningful variables and progressing that or those variables? ANDY GALPIN: So progressive overload can come in the form of any of the modifiable variables. So you could increase the complexity of the movement. You could increase the intensity or the load. You can increase the volume by either more sets, more reps, or more total exercises in a day. ANDREW HUBERMAN: What about time under tension? ANDY GALPIN: You can also manipulate how-- the tempo of each repetition. You can also manipulate how many times per day you train. So you can manipulate frequency. You can also manipulate rest intervals. So you can progressively load any of these things. Increase intensity. Run a little bit faster. Complete the same amount of work slightly faster. Put 5% more on the barbell, or the load, or the handle, or whatever you going to do. That's the simple way. If you want to think about volume, in the case of endurance work is simple-- mileage, time, whatever. In the case of lifting, all you have to do is take the amount of repetitions you're doing per set, multiply it by the sets, add that all up. So if you're doing three sets of 10, that's 30 repetitions. If you did three exercises, you just did 90 repetitions. Put that number down for Monday. Put that number down for Wednesday. Put that number down for Friday. Add that total up. So say you did 90, 90, 90. You would look and say, my total number of

repetitions this week is 270. If I want to go up 5%, then I need to go up another 15 or so total repetitions. Great that's all we have to do. That's the increase. You may keep the load exactly the same, keep the exercises the same, change nothing else. But you want to add 15 more total reps for your week. And you may choose to do that by adding one more repetition per set. Close enough. So last week I did three sets of 10. This week I'm going to three sets of 11. It can be as simple as that. Again, it can be complex. I walked you through-- it can be any of the modifiable variables. But the progression I just laid out is fairly simple, and it's honestly the one I recommend for most people, just because it will avoid confusion and it will avoid people taking massive leaps in volume. So the typical strategy I would recommend here is increasing load or intensity, or a little bit of a combination, slowly for about six or so weeks and then taking what we generally call a de-load. So back down to maybe 70%. Whatever that number is you've been doing. So you did three sets of 10 and you worked yourself all the way up to three sets of 15. Back that down and maybe we'll do two sets of eight for the week. And then we'll come back the following week and go back and do the highest we've done. Now we're all of a sudden we're going to do four sets of 12 or something like that. So if you get these little de-loads every-- depending on what you're doing, four weeks or so-- you should be in a spot where you can continually progress for a very long time without either burning out or overloading, and over-stressing, and injury pattern. So the simple way, pick intensity or volume. And just go up slightly every week for a short span of time, generally around six weeks. And then you come back and change your strategy if you'd like.

ANDREW HUBERMAN: Because you mentioned sets and repetitions here, I just wanted to remind folks that in the episode that we did on strength and hypertrophy-- and that also included speed-- there was a description of a terrific program for strength, which is the three by five program, or three to five program, as it's called, which is to select three to five exercises performed for three to five repetitions three to five times per week with three to five minutes rest in between those exercises.

ANDY GALPIN: For three to five sets.

ANDREW HUBERMAN: And if I recall correctly, the protocol for generating hypertrophy, muscle growth, is to perform a minimum of 10 and probably more like 15 to 20 sets per muscle group per week. And that can be done in a single session per muscle per week. So one could train, for instance, quadriceps one day per week, as long as you're getting that volume of sets per week. Or it could be divided up across two or three different sessions for that individual muscle group. Of course, people are going to target all their major muscle groups and hopefully some of the minor muscle groups as well. And as I

recall, the number of repetitions that can generate hypertrophy is quite broad, anywhere from six repetitions all the way up to 30 repetitions. But by the end of the set, it should be to failure or close to failure with good form. Is that correct? ANDY GALPIN: Yeah. And we would say, close to failure is probably most appropriate. You can actually reach failure maybe on a few of the sets, maybe the end. And probably best to choose that with the exercises that are safer, not that any exercise is particularly unsafe if you do it appropriately. But you may not want to go to true failure on every set for the more complex, larger, riskier exercises. So hedge pretty close to failure, but not all the way. ANDREW HUBERMAN: And I realized I forgot to mention rest intervals between sets. It follows that if a large range of repetitions are performed that a large range of rest intervals are allowed, meaning that there could be rest intervals between sets of as low as 30 seconds between sets or as high of two or three minutes, depending on the loads

01:43:59 #9: Rest Intervals, #10: "Chaos Management"

that one is using. And that, of course, will scale with the number of repetitions. ANDY GALPIN: Excellent. In fact, that leads me into step number nine of designing your own training program, which is you've decided on a goal. We've worked our calendar out. We've figured out how many days per week and how long we're going to work out in those sessions. We then went and selected our exercises. We balance them across the movement patterns and the muscle groups that we need so we're not causing excessive stress on the same exact joint or muscle group over time. We then ordered our exercises based on priority. Because of that, we've identified our goal. We went back and we selected the volume, which is the repetitions per set, the total amount of sets, and the load per set that matched the goal that we wanted to get or the adaptation. Now, all we have to do is fill in the rest intervals, which reflect back, again, the goal. So generally higher rest intervals, which means time that you rest between your sets. Higher somewhere between two to five minutes for things like speed, power, and strength. Perhaps a little bit lower, although as you mentioned, it could also stay high for hypertrophy. And then for endurance, you follow the rest interval that reflects the type of endurance training that you'd like to get. That's walked us through one through nine. We're almost done. We've put together a pretty nice little protocol. It should be well rounded. It should be effective. We've also talked about how to progress it from week to week, keeping it within, again, four to six weeks, maybe up to eight before we then take

a back-off. The very last thing we have to do to make sure this training program is customized to you, your goal, and your situation, which is then going to enhance your likelihood of adherence and consistency, as well as increase the likelihood of effectiveness is, we just have to do a little bit of what we call chaos management. Which is take a quick moment to think through, this program looks great. But if I had to nitpick it, where are the possible chances of failure? And you just want to think about where would I predict things would go wrong? And if anything pops out to you. Try to come up with your solution at the beginning. And this could be a number of things. So maybe you've picked an exercise and you realize, man, I really actually don't like that exercise. Or maybe you look at the schedule now that it's laid out in front of you. You look at your work schedule. And you're like, ah, maybe that's a bit aggressive. I don't know. It could be any number of things. But it is a useful exercise to just think through everything realistically. I typically just-- it's the adage I teach my graduate students-- before we hit Submit, we're going to sleep. So it's there. It's ready. We're going to take 12 hours. We're going to wake up the next day and look at it again and go, are we sure we're good here? Yep. Make adjustments if you need. If not, if you feel confident, then hit send and cross your fingers. ANDREW HUBERMAN: Yeah. We were referring to submitting the manuscript. It's interesting you say that. I have a statement that I always make to people in my lab. They hit Submit, and they always say that you realize you're going to wake up tomorrow morning. There's going to be an email in your inbox that something was formatted incorrectly and you're going to spend tomorrow reformatting and submitting again. So I've also learned that every project is actually two projects-- ANDY GALPIN: I'm sorry. I'm trying to not die over here and interrupt you. [LAUGHS] It's true. You have no-- ANDREW HUBERMAN: Yeah. It's true. I've done this enough times. I've done this many dozens of times. And then there's also another truism of science which is that there's the project, there's the scientific question. And then the paper is yet another project. And I actually think this is an analogy that carries over to other domains of life. I think that any time we take on something, if we want to write a book, or we want to get a degree, or we want to do a fitness program, I think it's worth thinking about those decisions as actually to taking on two major things. Because one is the planning and organization around that thing. And the other is the actual performance of the thing. ANDY GALPIN: Wonderful. ANDREW HUBERMAN: And so, I say that, because here what you just described, this 10 steps to consider in designing a program, I think some people who are real list makers and love the precision and the thoroughness-- and I'm

one of these people-- thinking, this is great. I just want to check off each one of these things on the list and figure out the ideal program for me for a given period of time et cetera. And then other folks might be thinking, well, that's a lot. That's just a lot to do. But what I know with certainty is that performing those sorts of, let's just call them what they are, those tasks of figuring out what's what, where the defenders are, et cetera, without question makes everything go so much more smoothly once you are into the actual performance, the action of doing the exercise program, or the book, or the podcast, or whatever it is that you happen to do. So I'm grateful that you brought up both the things that act as conduits for getting good work done and this notion of defenders and bottlenecks. Because we don't consider those, I would argue that it's a very low probability that anyone will succeed.

01:49:06 Fitness, Health & Longevity Goals, Proprioception & Non-Structured Exercise

But when one does consider those, even just a few of them, I think the probability of success goes way, way up immediately. ANDY GALPIN: That's actually a very good point. That is a lot of work for a lot of people. And I know when I'm consuming information, it is helpful to hear structure, and systems, and design. It's also helpful to hear actual real-life examples. So maybe the next thing we can do here is I can just walk you through an entire setup and a program considering folks that are in bucket A, B, and C. And maybe I'll save a little bit of the explanation. And we'll eliminate maybe some background. And I'll just walk you through what this could look like. All right. So I created a program which should run about a year. And the idea here is that this could be an evergreen system. So one could check off all the boxes that we've talked about. So in general we want to have three primary goals with exercise. We want to look a certain way, whatever that means to you. We want to be able to perform a certain way, whether that's for life goals, like hiking and energy, or sport goals, or whatever. And then we want to be able to do that across our lifespan. So a program that gives you all the goals we talked about, and a program that covers that health combine that we referred to way back in some of our earlier discussions, which as a little bit of a recap is, what are the physical fitness parameters that we know are critical to maintaining both lifespan and wellness span? And as a bit of a reminder, those are things like your grip strength, your leg strength, your total amount of muscle mass, your actual speed and power so that you can catch yourself from a fall, your VO2 max, and your physical fitness. So I want a

program that does a little bit of all that. It's similar, actually, and we're kind of crossing barriers between our three buckets. So I need to be able to control my fat. I need to be able to have enough muscle. That muscle needs to have enough function. And I need to be able to maintain range of motion so that I don't lose flexibility and get hurt. And then I need to have a good VO2 max as well as to be able to sustain energy over time. So that was the goal of my progress. Now, a couple of other things that we haven't chatted about, which are very important. You have mentioned, I think, on a previous podcast about the importance of seeing light? Is this something you've covered at one point or another? ANDREW HUBERMAN: Yeah. I joked that I'll be going into the grave and they'll be shoveling dirt onto me and I'll be telling people what I'll tell you again now, which is to get five to 30 minutes of sunlight viewing as early in the day as possible, ideally from sunlight. But that's why it's called sunlight. Or from bright lights of another kind if you cannot get sunlight. And also get that in the evening. And then avoid bright lights between the hours of 10:00 PM and 4:00 AM, unless you do shift work, in which case, check out our episode on shift work. ANDY GALPIN: [LAUGHS] Amazing. So we've got a little bit of a juxtaposition where people are like, I need to work out and do all this training. But then I'm also supposed to be outside. How do I blend those two things into my training program? Cool. So I checked that box as well. I built that in. The last thing here is we've talked about structured exercise. And just in this episode, we've really opened up and do non-structured exercise-- hiking, sports, things like that. Well, one thing that is incredibly clear-- and my colleague and friend, Tommy Wood, at the University of Washington, published a fantastic paper very recently on the importance of proprioception in maintaining and staving off late onset dementia and Parkinson's. ANDREW HUBERMAN: Maybe just to remind people what proprioception is. ANDY GALPIN: Yeah, absolutely. So there's structured exercise. And that's very important. But then there's also things like balance, and coordination. And proprioception meaning you're adjusting to stimuli coming in from the outside world. So this stimuli could be sound. It could be light. It could be smell. Or in the physical case of the body, it is where you are at in space. So I'm feeling like I'm falling to the left. Therefore, I need to correct and move back to the right. So you don't get this with doing things like a hack squat on a machine. You get this typically from being outside. So now you're smelling and seeing things. And you're also not landing with your foot in the exact same position on an even platform. We get this from things like sport. Now I'm not only exercising, but I'm reacting to the outside world. The ball is going over here, my opponent's going over there. So it's

very important, in my opinion,

01:53:41 Tool: Year-Long Program Example for Overall Fitness

to have at least one session per week of exercise in which you are doing something that challenges proprioception. So how do I fold all of these best practices into one training program that's not 200 hours a week seven days a week? That's what I've laid out to you. Make sense? ANDREW HUBERMAN: Makes sense. ANDY GALPIN: Cool. Let me walk you through it. And then, maybe we'll come back into each individual category and you can ask questions about them. So the way that I think is best is to have a goal. And have that goal be around eight to 10 weeks long, like we've been talking about. So what I gave you is, let's start off with quarter number one of the year. So perhaps January through March or so-- and it doesn't have to be this long, but just as an example. You decide your goal is going to be to put some muscle mass on. So we're going to prioritize adding muscle. Now, within that, you're going to be bulking up, adding some muscle, but we're also going to be sleeping more. We know we need extra recovery in this session. And we need to go up in calories. Now, this happens to work nice for a couple of reasons. But in that protocol, maybe we're going to do seven days or seven sessions a week of physical activity. Doesn't mean seven days. But maybe those sessions are something like I will do one indoor sport. This could be basketball, could be any number of things. So I got my sport ticked off, and it's indoors. Why? I'm in January to March. The weather's probably not great for most of the world. So I'm not going to do as much outside activity. I'm going to do weights maybe three or four times a week, and then maybe two days a week I'll go for a long walk. Again, we'll come back and I'll explain to you why I made all these individual choices so you're going to run that for the first quarter. At the end of this quarter you're going to take a de-load week. Now, this could be fully off. Maybe this is when you schedule a vacation. Maybe this is backing off. Maybe you just keep your walks in and you spend the extra time on your family, or work, or whatever else we need to do. So we've bulked up a little bit. We spent 12 weeks adding some mass. Now we're going to transition into quarter two, which is where we start to actually get lean. This is actually a pretty standard bodybuilding template, which is put on some mass first, and then you get lean after that. So now we're going to get lean from April to June. We're going to bring calories down a little bit. So now we're actually going to play in a hypocaloric caloric state somewhat. The days tend to get

longer. So we're going to have more time to spend in the sun. So we're going to shift a little bit from an indoor sport activity, like the example I said earlier was basketball, to maybe stand-up paddleboarding, or some other thing where you're actually getting your sport done, you're reacting, you're using proprioception, but now you're getting that sun in there as well because you have a greater opportunity to actually do so, and the weather probably is going to cooperate with you more often than it would in, say, February. You then maybe going to pick a fitness or an exercise class. Any number of routines where you're with multiple people. And then, two days a week in addition to that, you're going to maybe lift some weights. So now, we've added some muscle. Now we've got lean. And all of a sudden, we're actually looking pretty good for the summertime. Hmm. Interesting. Quarter three, July to September, we'll transition, and we'll try to get into great cardiovascular shape. So we'll transition more into some high intensity interval type of stuff more frequently. We're going to maybe stay at maintenance calories now. We spend a little bit of time hyper, then we went hypo, and now we're going to go back to maintenance and keep along. We're going to continue to choose some outdoor sports, but maybe you change it up. Maybe you keep the same one. Maybe now we switch it out on the golf, or now we pick a pickleball, or we play basketball, but now we just do it outside. Any number of things you can do. So maybe even we do a couple. Change it up. You do that twice a week. You're spending more time in the sun now. You're looking outside and you're seeing this great weather and you're not cooped up in a gym but you're getting your physical fitness in. That's also going to be aiding in your high intensity or your interval, your conditioning, because you're doing more stuff like that rather than lifting in a gym. And then, maybe you're actually going to do some track workouts. Maybe we'll do this on a bike, or we'll do some hill sprints outside, any number of things. And then we'll do that maybe twice a week. And then we'll still lift weights twice a week in our gym. The last quarter then is going to be October to December. And we're going to transition there into more pure cardiovascular fitness. Because we're doing that, we're going to be working harder. And remember, cardiovascular training is generally expelling much more calories than lifting. So we're going to actually go up in calories. We're going to return to that. And that works out kind of well, because I don't know if or not, but people tend to eat a little more calories from the months of, say, November through December. ANDREW HUBERMAN: Yeah, holidays, and at least in northern hemisphere, colder temperatures. ANDY GALPIN: Totally. Maybe even we play with two workouts a day here. We're trying to get really in shape. We're trying to improve our

conditioning and our endurance in multiple areas. We're going to actually transition back into an indoor sport. So maybe we're going to do some kickboxing, or a jiu jitsu class, or something like that. We're going to maybe hit the cardio machine once or twice. Now we're hopping on a StairMaster, a VersaClimber, more maybe get an assault bike going, something like that. Maybe hit some machines and do our lifting there. Maybe we spent the rest of the earlier part of the year on barbells and dumbbells. We'll transition to some machines. And then we'll still try to get outside and walk twice a week. And that gets us our outside activity, but it's not necessarily a structured program. So we've got 15 minutes where the weather's breaking a little bit. So let's walk, get outside, and get a walk in. So that's the overall structure of everything. I would like to actually go back to the beginning now and walk through each one of these things in detail and explain why I chose certain things. I've kind of given some hints already. But I think it'd be helpful to walk back to the beginning and start there. ANDREW HUBERMAN: Great. I of the overall structure. I have just a couple of questions. The idea of training mostly for hypertrophy January through March makes sense. Followed by a period from April through June focusing primarily on fat loss. And then from July to September, speed and interval type work. And then October to December, you put to emphasize endurance type training. I thought for a moment that when we got to October, December, you were going to emphasize strength. And I'm wondering whether or not there's any incentive for training for strength October, December, so that when one arrives at the hypertrophy training January through March, we're that much stronger. The idea being then there's more muscle to hold on to as one then tries to lose fat from April through June. And then July through September is the speed work. Or is July through September the speed slash power phase of the program? ANDY GALPIN: The July through September would be more like your higher heart rate, learning to get all the way up, maximum exertion, and then recovering. ANDREW HUBERMAN: An October to December is long-form endurance? ANDY GALPIN: Moderate to long-form. So it's closer to that aerobic capacity stuff. It is closer to longer duration and moving through that spectrum. You are astute in pointing out that I didn't have pure strength really in there. You certainly could fold it in. But quite literally, if you spent three months bulking up in January to March, that's going to bring some strength along the way. So you should be fine there. But you absolutely could alter any of these variables if you want to emphasize something more than other one. So say you actually felt like you ran through the fitness testing. And you identified, actually, your endurance is pretty good. But you're struggling maybe with a

little bit of strength and maybe a little bit of lower muscle mass. You could substitute quarter three or quarter four and say, one of those quarters will be strength. And then I'll do all of my conditioning in another quarter. And what you've really done is the programming is still fairly simple. You've just altered the priorities a little bit. And therefore, you've altered the adaptation across the year. And why this is really important, this template is meant to be something you can just run back year after year after year. And you make a subtle change like that. And now, over the course of five, 10, 20 years, you're going to be in a fantastic spot at the end. So you can make easy adjustments along the way as priorities pop up, as goals pop up. But you're going to be in a position where everything is-- there's nothing that's going to be lagging behind. You'll be in a good spot. Most of your bases are covered to be pretty lean, have a good amount of muscle, and to be in great shape. ANDREW HUBERMAN: Two other questions. One just a quick question. For sake of generating proprioceptive feedback-- during the endurance phase, is trail-running a good option? ANDY GALPIN: Absolutely. ANDREW HUBERMAN: Great. Thinking back to the days running cross-country. It's October, December, you're trail-running. ANDY GALPIN: Totally. ANDREW HUBERMAN: Training for endurance. ANDY GALPIN: The ground is not super solid, which is even better in this case. So you're making more choices and trying to not fall on your face. ANDREW HUBERMAN: Absolutely. And then you mentioned bulking up. And I just wanted to highlight that there are some folks, myself included, while I'd like to add a little bit of muscle here or there, I'm not interested in overeating to the point where I lay down a lot of body fat stores along with that. ANDY GALPIN: Sure. ANDREW HUBERMAN: And I think a lot of people out there are not necessarily interested in, quote unquote, bulking up. I also-- my understanding of the literature-- and tell me if I'm wrong-- is that while there does need to be some sort of caloric surplus above what is required to maintain body weight in order to build muscle, that many people who try and, quote unquote, bulk up basically just end up expanding the size of their cheeks and face along with their limbs and torso. [LAUGHS] ANDY GALPIN: Yeah. ANDREW HUBERMAN: I'm not trying to poke fun at them. But the idea of deliberately overeating to the point where a lot of body fat stores come along, I would imagine that would just make the April through June phase that much harder. ANDY GALPIN: Correct. ANDREW HUBERMAN: And I'm not sure it's ever been studied directly. But I can't imagine it's all that-- excuse me, all that healthy, to bring along a lot of adipose tissue in one's pursuit of hypertrophy. ANDY GALPIN: You're absolutely correct. We have not gotten into the nutritional details

there. But yeah, thank you. Good clarification point. A couple of things. You're not going to be doing this very long. It's 12 weeks. We're not going to be six, seven, or eight months. ANDREW HUBERMAN: You haven't seen me eat. [LAUGHTER] ANDY GALPIN: Number two, just since we're here to clarify, the literature is ongoing in this area. And there's actually a handful of studies that I know are coming soon. But in general, when I say hypercaloric here, I'm referring to an increasing caloric intake above baseline by something like 10% to 15%. So if you normally eat 2,500 calories throughout the day, you might add another 250 to 400. I'm not doubling calories. I don't want you to be stuffing your face, hating food, feeling awful all day, and then putting on half of your weight as fat and half your weight as muscle. It is just technically hypercaloric because you're eating more, which is an absolute requirement for most people to add muscle. Some folks who have a high percentage of body fat and a low level of fitness training can actually get away with just being either isocaloric, technically, or even a little bit lower, and still adding some muscle while losing some fat. But for most folks, that's going to be challenging. So you're going to want to be in a hypercaloric state. Another reason I put it in here is because, remember, people tend to make these extra calorie choices during this part of the year anyways. And so, you're playing into life is why I chose that. It's like, hey, you can't restrict calories all the time. It's really, really hard. So maybe if we can put it calorie restriction during the phases of the year that's a little bit easier, and give you the freedom to have a little bit more calories during the phase of the year when you're probably going to want to do that anyways. Just make sure you're doing a style of training that supports that. So you're going to be trying to add muscle when you know you're going to be adding more calories. We're going to be trying to really push the pace on our conditioning when we know we're going to be eating more calories anyways. And so, that is actually, in fact, exactly why I chose those goals for those times of the year. It's because we're now playing into life a little bit more. But we, again, certainly do not want to be eating to an excess or where it's causing some of the problems you mentioned. We just need to be eating a little bit more. The last point here is, the next phase, April to June, we know we're going hypocaloric. So it's always kind of nice to go, yeah, we're going to go in a little bit of a calorie deficit here. But it's really just these few months. And it's OK, because I spent the last six months where I wasn't restricting that much, and then one actually where I got to eat a little bit more. And now, cool, not hard for me to convince somebody that to go we're going to bring the calories down right now, or in a month, in two months. And it's just going to be this 12 or 16-week phase, or

whatever you end up being in there. So those were some of the rationale that I was thinking of when I decided to do that. But thank you. That's a very important point in terms of the hypocaloric. It's not the dirty bulk. It's not the excess that a lot of folks will do. ANDREW HUBERMAN: And just a final point for folks in the Southern hemisphere, Australia, and South Americans. ANDY GALPIN: Ah, flip everything. ANDREW HUBERMAN: We actually have a large listenership in the Southern hemisphere. Of course, adjust accordingly. Even though the holiday months are still in November, December, there are, of course, holidays all year long. ANDY GALPIN: Of course. You got Fourth of July. ANDREW HUBERMAN: Many, many of the major holidays are around November, December. But it's summer down there. Just adjust accordingly. There's nothing holy about trying to achieve certain adaptations at certain times of year. It's more about trying to eliminate bottlenecks,

02:07:58 Tool: Overall Fitness Template by Quarter, Matching Goals & Seasons

defenders, as you mentioned. And it's really about the sequence. ANDY GALPIN: So if we go back to that first quarter, we're going to try to add some mass, for the reasons I just described. It's also tends to be pretty motivating. You're going to start the year off. You're going to want to train and get all excited because of your New Year's resolution. And you're going to see results immediately. We've talked about this in some of the previous episodes. The nice part about hypertrophy training is you see your muscles growing right now. Where the endurance stuff tends to have a little bit more of a delayed gratification. So I'm going to give you a win early. Now, we're also going to be sleeping more. Because we know-- and maybe we'll get into this in a future episode-- that sleep is absolutely critical to recovery and critical to growing muscle mass. So you're going to emphasize sleep more during this part of the year also because the sun is very low. It's harder to sleep for a lot of folks longer when the sun is out for longer, especially if you don't have a perfect blackout curtain. And so, you're just trying to play with the restrictions life gives you and optimize your scenario. So the sun's probably not out very often. And especially, depending on where you live, if you're anywhere like where I grew up in the Pacific Northwest, [LAUGHS] it's going to be dark, and gray, and gloomy most of the day. So it's not hard to convince you to go sleep a little bit more often. So we'll do that. That's also, again, why I chose an indoor sport. That activity, you're going to not shoot yourself in the foot. Being in the gym when it's cold and crappy outside is not that

hard to convince yourself to do. So you're going to be lifting your weights, say, four times a week. And then, again, getting some outside time in the form of a walk so that you can do it in the middle of work if you have to, or catching 20 minutes here or there, whatever it needs to be. The chances of you missing that walk are little. And you'll still get some outside time. You've talked about the importance of getting sunlight in even if it is overcast. So you can still nail all those boxes and be in a pretty good spot at the end of that quarter. So moving on to quarter two then, April to June. A lot of people want to look good during the summer months. You're more likely to be outside. You're more likely to have your shirt off because it's hot, because you're either on vacation, or going to the beach. So let's play into that a little bit. Let's let people look a little bit better, if that's what they determine to be looking better, during the months when they're more likely to have that. You're also more likely to have things like weddings over the summertime. People don't get married often in the winter. And so, people want to look good for these events. So let's play into what a lot of people already want. And let's help you get leaner. Not a lot of holidays that involve eating during that phase. And so, you're not going to feel like you're missing out on a ton of life outside of maybe a few smaller holidays in that phase. The days are getting longer. And so, we're going to choose to get in the sun more often. We can start getting a tan better. We can start getting ready for summer. And so, that's why we exchanged our indoor sport for an outdoor sport-- surfing, hiking, cycling outside, whatever the thing is you want to do. There's tons of them. Kiteboarding, like I said, skateboarding-- there you go. Get out and start skating a little bit, whatever it needs to be. So we'll do that once a week or so. And then I actually threw in a fitness class here. And there's a couple of reasons. One, now it's sort of nice to take the pressure programming off. It's also nice to, if you've been lifting by yourself, to get in there and lift with somebody else. It's also nice to now have some social interaction. The gamification, the group, the scoring stuff that happens in fitness classes is very, very powerful. It tends to be somewhat fleeting. So it won't last for a long time, for some people, others it does. And so, if you pepper this thing in and you know you're going to join this activity class, even if it's not great and the program design isn't perfect, it's fine for 10 weeks. In fact, you may really, really enjoy it. And also, again, it gives you something new to think about. Music is on. You're out of your house if you're lifting at your house. You're in a different part of the gym. The schedule is a little tighter. So you can't just go work out whenever you want. You've got to show up when the class is going. And you'll probably find that you just love it. You also get some social interaction, which is something that's

also very important that we haven't really discussed yet, if you're out playing basketball by yourself or whatnot. So this is just another thing I'm trying to fold in that still allows you to check off multiple boxes of things that are healthy for you. You've had episodes on the importance of social connection interaction. We talked about that in the quad breakdown of making sure you have relationship time and things like that. So throwing in a fitness class and just doing, honestly, something quite different is pretty fun. But then, still, keeping two days a week where you're doing a traditional strength training thing so you have some quality control there. Lastly, you can also then make sure you're hitting any specific movements or muscle groups that are very important to you. So you don't get to control that in your fitness class. But now you can at least do the gym and make sure you hit that muscle group that you have an interest in it. So now we're feeling pretty good. We're rolling into the summer. We're pretty lean. We're getting out in the sun a lot. We're bringing calories down a little bit. And we probably are feeling pretty happy. We're also not burnt out. We've done a lot of fun things. And we've checked a lot of the boxes off for long-term development. We had a combination of specificity with exercise selection. But we also folded in just a little bit of variation so we don't have to worry about overuse injury of doing the same machines, the same lift, months, and months, and months, after months, and slowly wearing down something if our technique isn't perfect. So now we're going to go into our quarter three, which is the summer months, basically, up here at least, July to September. We'll transition. It's been a while since we've done some conditioning. So we may have lost a little cardiorespiratory fitness. We may have-- not feeling great anymore, maybe energy throughout the day stuff is starting to leak down. So we're going to get in shape. We're going to push our heart rate high. And we're going to bring the calories back up. The summertime, 4th of July, other holidays like this where eating is involved, maybe you're going to sporting events and things like that. Our sport choices is often going to be outdoors. But in fact, what you'll notice here is, is I've ramped the sport choice up to twice a week. And in fact, I would encourage you to do two different types of exercise. And one of the primary reasons for that is to spend more time outside. A challenge we often see with people with exercises going, man, it's so nice outside. I can't go sit in the gym for 45 minutes. I don't have that much free time. And then, Huberman's over here telling me I need to get direct sunlight more. How am I going to fit this in? Well, do your exercise outside. Enjoy it. Now, if you live down here like us, you take sunshine for granted. But a lot of people I know it's like, it's only nice for two and 1/2 months of the year. Get outside. So let's push more of our

fitness training to outdoor activities. These sports can be intense or not. It could be go out there and swim hard. Get in the ocean. You're going to do open ocean swimming instead of swimming in the pool indoors, or whatever the case may be. So we're going to give ourselves more of a priority of being outside, looking-- we've looked pretty good. We're a little tan. And we're enjoying all the benefits of training outside and the lack of structure. Still, we have structured, but not so specific like the machines and the weights give us. Maybe even now we're doing some track workouts. So now we can do something like sprint the straightaways, walk the corners. And we don't have to, again, do our conditioning on the same StairMaster, or machine, or whatever we're on. So we're going to enjoy some stuff like that. We're going to be athletic. We're going to run. We're going to move. We haven't talked about that yet. Everything has really been about structured exercise. Well, now we're going to do some sprint work. We're going to get out and see that, which is a really important human quality that, I think, is important to not lose, is actually ability to sprint. So we'll do that. And then we'll still make sure we lift twice a week for the same reasons I talked about in the previous phase. So we make sure we have some quality control there. We maintain some of the muscle that we built in the quarter before. We don't lose too much strength. There is very good literature to suggest strength maintenance can be done in as little as five sets per week for a very long time, really up to eight-plus weeks if you do a little bit. So you're touching it enough where you're not going to get really, really weak. But what you wouldn't want to do is go 12 or 16 weeks where you lifted no weights. And maybe you got in great shape, but you're going to feel very weak after that. So maybe that number could come down to one time a week if you really wanted it to. But one to two days a week where you're lifting the big exercises, the muscle groups and movements of interest, and you're good to go. Then, lastly, we roll into our final quarter, which is October to December. And we're going to really get in great shape. The sun is starting to come down. We're rolling into the holidays. Weather's getting worse. We may have other outdoor activities we want to do, like, in my case, you're going on a hunting trip, you have some travel, conferences, whatever the case may be. And so, we're going to choose an indoor sport. And I love combat sports. So the example I gave earlier was jujitsu. Or maybe you just transition your basketball to inside, or your pickleball comes inside, or whatever it happens to be. And you're still going to have that twice a week. And then, maybe instead of the track workout outside, you do that same workout indoors, now back on some sort of machine or something like that. Our weights are actually now down to once a week because we're

really pushing the pace on cardiovascular. We're doing once a week to maintain it, to not lose, and get too far behind. But we really want to bring up our VO2 max. We want to bring up our efficiency, our cardiac output, and everything like that. And we're still going to now walk twice a week so that we get something outside. And I talked about why, again, it's nice to have that flexibility of not having to train outside, because now you got to warm up and do all those things. We just get out and get a walk in. You still get the outdoor experience. So we run through that entire thing. And then you just start back the next year. Ideally, again, at the end of every quarter, you take a week off. Whether that is a true full week off, which I'm fully supportive. I mean, friends, we're only talking about four off weeks a year. That's absolutely fine. Or it could even be a slight de-load week if you want it to be. So we shouldn't run into too many issues of overuse. We have a lot of variety. We get a lot of movement patterns in because we're mixing in sport with machines and dumbbells. We're mixing in social interaction. We're mixing in the sun. We're mixing in enjoyment. We're mixing in fat loss, strength, hypertrophy, some cardiovascular endurance. We're mixing in calories in high, we're mixing a little bit of calories low. And we're trying to hit as many of these nodes as possible. If you also wanted to cut each one of these a little bit short and repeat your fitness testing at the end of every quarter, you could. I would probably recommend doing it at least once a year. Perhaps doing it maybe the third week of December or so. So you run that testing. That's your last week of training. Then you get to go on your vacation break. You come back at the beginning of the year. You've got new goals, new targets and you go. If you want to repeat it twice a year, do the same sort of thing at the end of June. It's fine. I know I laid these out as quarters, which is generally 12 weeks, with one back-off week. But if you wanted to make it nine weeks and a testing week, and then a back-off, or 10 weeks, it's fine. It's close enough. So the last little thing I want to say is, let's assume you're doing the 12 weeks. And you're going to have a back-off week at the end of the 12 weeks. I would actually still then recommend having at least one back-off week halfway through. So it would look like this. Five weeks hard where you're progressing. You're going up, up, up, up, up. Every week you're either increasing volume intensity like we talked about a few minutes ago. Then week six, de-load. Go down to 70% volume intensity. Come back. Go hard for five more weeks. And now, week 12 is your true off week where you, again, take the whole thing off. If you do that, you now have four weeks a year where you're totally off. You have four weeks a year where you're really backing down. And you just have five-week segments all year round where you're just going to

push it hard for five weeks. You're going to get a break. You're going to reset, and you're going to transition a little bit. Now, as I started this conversation off with, there are many ways you could structure your training program throughout the year and hit those primary goals we talked about of looking fantastic, feeling amazing, and being able to do that your entire life. All I can tell you, though, is I know this model works. Because we've done this a lot with our clients in our rapid health optimization program. And this spans everything from 25-year-old folks who are competing in the Boston Marathon to a lot of individuals who have never exercised before, who maybe have done a little bit of exercise. In fact, it's quite literally all three of the buckets you laid out. We've had clients in all of those areas, both men and women, young and old. And we've had a tremendous amount of success transforming their lives using a very similar model to what I just laid out.

ANDREW HUBERMAN: I find that overall structure to be immensely informative. And I'll tell you why in the context of a number of examples with myself, although that's the least important of them, frankly, but examples of family members of mine and friends of mine who've undertaken consistent exercise training programs but that haven't varied the program so much. And here, again, I think of the person who really loves to swim. They have a low barrier of entry to the pool or to the ocean. They love being in the water. I am not one such person. I like being in the water, but I don't motivate to drive to the pool or to bike to the pool or to get into the ocean that often. Once I do it, I enjoy it. But for me it's running and lifting weights. And it has been for a very long time. I have a family member, close family member, who doesn't really like, quote unquote, exercise, but loves dance and dancing. Going out dancing, yes, but dance classes in particular.

ANDY GALPIN: Amazing. ANDREW HUBERMAN: Really enjoys it. Loves to be distracted from the fact that she's doing exercise and just really enjoys it. And actually is a very good dancer despite the fact that she's related to me. And on and on. There are many examples, I think, of folks that fall into the different bins that we talked about earlier but that also tend to default towards a given structure of training one way and doing that throughout the year. I can tell you right now that I'm personally going to modify my schedule according to this four quarters per year. It actually works because I've mostly been on the quarter system in academics for a very long time. I was at a university that had a semester system once. But this quarter system is actually the one that we follow academically. So that's one reason why it's a natural fit for me. I confess that I typically don't vary up the proportions of endurance to resistance training. I tend to keep those about three and three across the week. Three resistance training sessions,

three, let's call them cardio sessions. But each one designed to achieve a different adaptation. And I've now altered those even further based on your recommendations in this episode and previous episodes. But what I have not done is to really think about de-load and to really stick to the structure that I set out to accomplish across the year. On the topic of de-load, for me, the de-load has been when I get overwhelmed with work, or I've gotten sick. I don't tend to get sick that often. But every once in a while I get knocked back with a cold or a flu. Once every three or four years I seem to really get hammered with a fever-inducing something or other. And then I'm bedridden for a couple of days. And then I'm back at it. And I tend to come back rather slowly. And that tends to be my week off. But I'm beginning to wonder whether or not part of the reason I hit those streaks of being overwhelmed by sickness or by stress is that I have not done a de-load period. So one of the things that I'm going to immediately implement is a periodic de-load according to the program that you described. And I'm also going to start matching my specific goals for each quarter with time of year. I don't think I've done that. And it's not because I live in California. And by the way, folks, there are temperature variations and amount of light across the day variations in California as well, although they are not as dramatic as they would be near the North Pole, for instance. ANDY GALPIN: Yeah. They're pretty moderate. ANDREW HUBERMAN: Right. But of course, some of the listeners are at the equator. So they have the opposite issue. In any event, I'm definitely going to do that. I'm going to start incorporating regular de-load periods. And I am going to be very dedicated, very disciplined about sticking to a program for three months devoted mainly to hypertrophy, then a three-month program devoted to fat loss, then a program devoted to aerobic output, and then one devoted to endurance. Although I must say, it's very tempting for me to do a very specific strength-dedicated portion. ANDY GALPIN: Sure. ANDREW HUBERMAN: Because I don't tend to be particularly strong. I'm not weak, but I'm not particularly strong.

02:25:49 Training & Life Challenges: Sleep, Illness

So I might consult with you as to how I could vary endurance and strength. In any event, I love the idea of a macro-structure. And I love the idea of de-loads in anticipation of being able to go further in the long-run in terms of results. I'm hoping this next year, because we're just on the cusp of a new year, will be the first year in which I don't find myself getting some bug, or virus, or whatever it happens to be from time to time and

having to back off on training for that reason. And that prompts a question. And it's something that I want to get into in more detail with you when you describe recovery-- an upcoming episode. But a couple of quick questions. Maybe there are some short or short-ish answers you could provide. If I'm not feeling well, like I really had a poor night's sleep. Maybe just two to four hours of sleep for whatever reason. Train or don't train? That's the first question. Second question is, if I'm starting to feel a little bit of a throat tickle, and I'm in that phase of denial, like I don't get sick, I'm not getting sick. And would I be better off bundling up some hot liquids, getting into bed, sleeping in a little bit more, et cetera, and protecting myself against that, or would I be better off training? And if I've-- and then the third question is-- if I've already succumbed to a bug, but it's not a severe bug. I don't have elevated body temperature. So no fever. I'm not hacking up, not productive cough or anything like that. But I'm feeling just kind of not well, head cold-ish sort of thing comes to mind, and it's not seasonal allergies, train or don't train, leaving aside the point of whether or not I'm in a position to get anyone else sick. Because obviously that's a bad idea. ANDY GALPIN: Of course. ANDREW HUBERMAN: So lack of sleep, I would say, 30% to 40% of one's typical sleep the previous night, train or no train? Starting to feel like one might be getting ill. And then the third category is coming back from being sick. ANDY GALPIN: Yeah. ANDREW HUBERMAN: Thanks. And sorry for the extended question, but I want to make sure there was enough detail there, because I think these are three common scenarios. ANDY GALPIN: We are going to cover that in the recovery conversation that's next in detail. And I will give you very specific guidelines. And we'll have plenty of time to go into that. The quick answer is, it comes back to what phase of training you're in. Now, to walk through each scenario. If it is a crummy night of sleep, and I am in a phase of training in which we are trying to cause adaptation, I have a lot of space in my schedule, and I'm really using this time to make progress because I know coming up soon my schedule will change and my time to train will go down. I'm still training. I might use a bunch of tricks that we have for feeling better instantaneously. We call these little hacks. These are acute hacks. These are not chronic hacks. I'm going to push the pace. If it is really close to a de-load week. Say it's Wednesday and I start my de-load next week. Or this is not one bad night of sleep, this has been four bad nights of sleep in the last five days. This has been six kind of crummy nights over the course of the last nine, and you're starting to see a larger pattern, then that's a different answer. So the question we're going to ask ourselves is, is this acute? Or is this a tendency, or actually a chronic thing? If it's acute, and we're close, we're

going to train through it. If it's acute and this is not a phase of training when we're trying to really push, then maybe we back off a little bit. If it's the opposite though, we need to probably make some changes and give ourselves some recovery. This may include anything from a moderate training session, maybe I'm going to go in the sauna and sit through that, and then do some breathing drills and some mobility stuff. Great. Maybe I'm going to go to the gym and ride the bike at 50% heart rate. Something restorative like that. Gives you a little bit of energy but doesn't beat you down. That's probably where we're learning. If you're feeling sick and you think it's coming, I'm probably going to do option two as well, which is some sort of restorative training. So again, this tends to be moderate. Could be weights. Could be any of the stuff. Maybe you're going to go out for your swim or whatever. But we're not going to push past probably about 70%. We can absolutely induce immunosuppression with excessive training. And so, you may want to walk out of that. The last case, which was, I think, phase number three, you said there, which is, I got a pretty gnarly cold right now. Am I going to train? Most of the time for most people, I'm just going to say, just shut it down. Get out of there. If you're not going to be able to get productivity done there, you may be better off either going and sleeping, catching up on work doing other stuff. So that the next time you go to train you don't feel behind and we can give a good solid effort for it. I know other people who will train right through it. I tend to not, to be totally frank. If I'm feeling kind of junky, I'm really not going to train. I may actually probably do some hot water immersion. So bath, Jacuzzi, things like that. I actually like those better than I like sauna. ANDREW HUBERMAN: If one is ill? Or you just like them better than the sauna generally? ANDY GALPIN: Oh, both, actually. ANDREW HUBERMAN: Oh my. ANDY GALPIN: Yeah. ANDREW HUBERMAN: First person I've ever met or come on this podcast to say you like baths and Jacuzzi more than sauna. ANDY GALPIN: Yeah, absolutely. I may even do some ice. Probably not a ton though. Because you've got to be careful there. That's a big stressor. And if you're already over the line, you may be adding a pass there. Or I may go sleep. If I'm feeling very, very, very sleepy, and sometimes depending on what kind of a bug you get, that can happen. I will just sleep. And that might be the best choice you have. If that means you kick the cold half a day earlier, then you just won in the aggregate. So those are probably-- it's a little bit of insight of the algorithm that I'm running with those things. ANDREW HUBERMAN: Those are highly informative answers. Thank you.

02:32:10 Tool: Program Flexibility, 3-Day Weekly Training Program

And I look forward to our discussion about recovery so that we can go into even more depth on how to recover. ANDY GALPIN: The last thing I do want to say here is going back to our quarter system. The examples I gave with the bulking up, losing fat, and then getting into better fitness and cardiovascular fitness at the end, those were just samples. Friends, please don't take that literally. If you want to emphasize strength more, put in some more strength. If you want to emphasize a different one of our nine adaptations, great. Do that too. If you're somebody who has a lot of body fat to lose, then maybe put that for two consecutive sessions, or every other. You can modify them. We've talked about nine very specific training adaptations as well as in fat loss. I only gave you four, which is just meant to be a sample that you can roll in or out. But use those priorities to adjust that system according to what is important for you now, five years, and then 45 years down the line for whatever that may be. So you are absolutely free to modify the order. You're absolutely free to modify the primary outcome. And then, adjust the specifics within each quarter based upon what is needed to do to optimize that outcome. I think maybe one more tool we can offer people is maybe giving the individual week a little bit more structure. So the system I laid out is month by month. And maybe we can lay out, say, a three-day a week workout program and a four-day a week program. That would still hit some of the same well-rounded adaptations. That probably covers maybe not individualized per bucket that we've talked about. A, B, and C, but it's going to cover 75%, 80% of what we'll need to occur in all three buckets. And then, you can use that last 25% for your individual goal or specialization. So maybe we can jump into that next. ANDREW HUBERMAN: Great. Let's hear it. ANDY GALPIN: The first one I want to give you is just a basic three-day split. That, again, same idea. It's a well-rounded exercise program. I actually wrote this all in an article that is on XPT's website. So perhaps we can link directly to that. I will just jump you straight to the answer. You can read more about why and details in that article if you'd like. But this is day one, day two, day three. You could do these days where you split them up, actually having, say, 24 hours in between, or you could do these back to back. It doesn't necessarily matter. In this particular case, say, day one you would start off and do a little bit of speed and power. And then you may finish that with a little bit of hypertrophy. Now, if you want to gain more speed and power you just do more of it. If you want to maybe just do a little bit to touch it, and you really want to gain some muscle, you would do more of an emphasis

there. So the template can stay the same, and you would just increase the amount of either adaptation, the speed and power stuff, or the hypertrophy, based on how high it is in your priority list. Those are combined together because, as we talked about earlier, they don't necessarily interfere with each other. You would do the speed and power stuff first because it wouldn't hamper the hypertrophy. If you did the hypertrophy first in that workout, it would probably compromise your speed and power. And in that case, you would actually not be getting your adaptation. So day one you do that. And that could be a 20-minute workout total, or a two and 1/2 hour, up to you. Then you would come back maybe the next day or two days later, whatever you'd like to do. In your second day of exercise, you would start off with a pure strength protocol. And you would finish that with what I'm calling just a higher heart rate. So this could be something like our anaerobic capacity stuff. It could be the aerobic capacity, something where you're getting up to close to high heart rate. It could be those 20-second bursts. It could be a 90-second burst, five-minute mile repeats, anything you like. You can just plug and play this in. You're getting to a spot now where you've had a little bit of speed, a little bit of strength, a little bit of hypertrophy, and you've touched the high heart rate. So we've checked off most of the boxes already in two sessions. Our last session then would be more of a steady state long duration endurance. And so, a three-day week split like that is going to be a pretty nice setup for the average person. ANDREW HUBERMAN: So this could be a Monday, Wednesday, Friday, Tuesday, Thursday, Saturday. What's happening on the intervening days? ANDY GALPIN: Totally off if you want it to be. So I set this up as the best I can give you, Andy, is three days. Great. If you have more, we could certainly improve it. But this was my worst case scenario. I've got other things in my life. The most I could do for exercise is three days a week. ANDREW HUBERMAN: And given that it's three days per week, how long-- approximately how long each of these workouts going to last? ANDY GALPIN: I would do a whole body exercises for almost all that. I would do your full body parts. And I think you could certainly finish that in 45 minutes of work time. A little bit of time to warm up, some down-regulation at the end. You could be in and out of that gym in certainly under 60 minutes. The reality of it is you could probably be out of there

02:37:12 Physical Activity vs. Exercise

in under 50 minutes. The total work time could be 30, 35 once you get going. ANDREW

HUBERMAN: So that's three days. As you pointed out, probably more work per week is going to be better in terms of maximizing goals of aesthetic goals, and performance-enhancing goals, and longevity goals. ANDY GALPIN: Yeah. ANDREW HUBERMAN: I mean, the numbers that I've heard is that we should all try to get somewhere between 150 and probably more like 180 to 200 minutes of zone two cardio per week minimum. But as I recall, you consider zone two cardio so low intensity that just walking around qualifies as really zone one, zone two cardio. ANDY GALPIN: Yeah. Not to take us too far off track. But I think it's actually useful to differentiate what I consider to be exercise and physical activity. So physical activity is out for a walk. It is using a walking treadmill while you're at work. It is parking farther in the parking lot and taking more steps. These are all important. And what's clear, you are not going to reach, likely, optimal health by only exercising hard and then sitting around the other 23 and 1/2 hours of the day. So it's very, very important. Whether you want to do that in the form of zone one or zone two and hit 30 minutes a day. Various organizations will say things like that. You need to have 30 minutes a day of moderate to low-intensity exercise. I don't really care. You can combine it like that if you want. What you don't want to do is just physical activity only, which is almost always going to be like zone one to maybe zone two. You also don't want to go the other end of the spectrum, which is, again, I lift hard three days a week. And then what to do you do the rest of the time? Nothing. That's not optimal either. And so, I guess the system I walked you through here-- or the example, rather, I walked you through is-- you would need to maybe supplant that with being physically active. If you work, say you're a nurse, and you're on your feet. You're moving up and down. You're probably actually covering a decent amount of your physical activity because you might be at 15,000 steps a day. If you're sitting in front of your computer and you do this same three-day split, you would probably need to go out of your way to make sure you're adding a bunch more steps. And so, you might need to add several hours of walking to hit that 150, 180 minutes a week of physical activity. Because the program I laid out is, if you're doing, really, 45 minutes three-days a week, maybe 60 minutes, at best you've hit 180. 60 minutes times three, 180 a week. So you might actually need to then throw in maybe some more specific walks. So you could do that in a number of ways. It could be, again, actual structured exercise. It could be simply I'm going to do a 10-minute walk three times a day. It could be the exercise snacks that we talked about in a previous episode. So there's lots of ways to engage in more physical activity.

02:40:12 Tool:4-Day Weekly Training Program, Muscular Endurance

But to me, those are different, oftentimes, than structured exercise. ANDREW

HUBERMAN: I think many people will appreciate that you put out there for us a three-day-a-week protocol, because many people simply don't have more time to exercise. They're putting emphasis on these other bins in the quadrant. And frankly, those other bins are very important as well. So wonderful that people can check off some critical boxes for aesthetics, and performance, and longevity with three days of work or workouts, per week, I should say. What are some other schedules that people can follow if they're willing to dedicate a bit more time toward their fitness? ANDY GALPIN: Sure. If you wanted to do another sample of maybe a four-day week. And again, to clarify this, I'm really happy you said that. This is a four-day a week of structured exercise. This would not account your physical activity and moving around. ANDREW HUBERMAN: Which everybody should be doing. ANDY GALPIN: Absolutely. Maybe this is something like day one you're going to do a strength-training session, and you'll stay in the five to 10 or so repetition range. A little bit of strength, a little bit of hypertrophy, you've checked off a couple of boxes. Probably whole body, so that you get all the body parts covered or close. We're looking at generally multi-joint exercises. Could be combination of barbells, free-weights, bands, machines, anything like that would be day one. You could come back the very next day, or you could wait 24 hours. But the second day of your exercise would be maybe your long duration. And this is actually sort of similar to how you set it up. It's you do a little bit of the inverse. But what you're kind of saying is, I'm probably going to be a little bit sore from day one. And I don't have any free body parts that aren't sore. So instead of trying to do another lift or something, I'm just going to put in some restorative longer duration stuff-- same exact principles for long duration we just talked about. It could be a swim. It could be any number of things. Could be your sport. It could be you're out, ride the bike and go for a jog in the sun, whatever you would like to do. If you're feeling better, maybe that's a little harder longer. If you're feeling pretty beat up from the day before, maybe that's a little bit shorter and slower. You can modify it. Then maybe you take the next day off. Or that's open. Your third day of exercise is now, instead of being that five to 10 repetition range for your lift, you do something like 11 to 30 reps range. Also, this could be exchanged for something more like body weight, more muscular endurance type of stuff. So this is a great day, maybe it's yoga. Maybe it is a gymnastics thing you're working on, or any of the many other styles of training that are

not quote unquote lifting weights. But they're not just walking and hiking. So it could be a Pilates, or equivalent, anything like this where you're going to get some muscular burn in there. But it's probably not any additional weight outside of body weight, or if it is, it's fairly minimal, five, 10, 15 pounds, something like that would be nice. Could also be done in a circuit. So we could hit our high heart rate and we could hit some muscular endurance in there. Group activity class might be nice here. Even maybe something like a spin class or a dance class. All these things could be great. And then, maybe you even finish that with 10 minutes of some light weights to hit the body part you say didn't get. So maybe you did the dance class. And then you finish and you do 10 minutes of upper body sets of 30 to make sure you get a nice pump there, because your legs probably got some work during the dance class, but your upper body didn't. And so you balance the system out a little bit. So all body parts got a little bit of muscular endurance. Your heart rate got really high, came back down, and you checked both of those boxes. Now, it's important to remember the hypertrophy episode. Doing sets of, say, 15-plus repetitions per set is as effective as doing sets of five to 10 or 12 for hypertrophy-- gaining muscle. It's not effective though for strength gains. So you wouldn't want to do this only, because you'd really be doing nothing to improve your muscle strength. And you want to make sure that that box is ticked at least a little bit. Then, again, you could take the day off after this. Or you could roll right into your fourth exercise day, which would be your last exercise session of the week. And you would do something more of a medium intensity. So this is a little bit higher intensity than our second day. And this could be something like shadowboxing, or hitting a heavy bag. It could be a little bit of higher intensity intervals, but not all the way up. So maybe this is you're going to do a one minute on, one minute off on the bike. But you're only going to go to 85%, 90% heart rate. And then, instead of going off during that one minute, you drop it down to 50%. So we would actually look like 30 minutes of straight work, but you would have a little bit of rolling intensity as opposed to staying really nice and restorative. It's going to be some work there. And you would finish it with something like five to six minutes total of max heart rate stuff. Which lines up perfectly with that number you actually [LAUGHS] created on our endurance episode of hitting six minutes total per week of maximum heart rate or close. So you could wrap that all up into one session. You could do those in the inverse order, thorough warm-up, a few minutes, whether you want to do 30-second bursts or a minute burst, or straight five minutes. This is a protocol I like to use a ton on the assault bike. It is simply a good warm-up, 10 minutes solid warm-up. Recover, and then I'm

going to go five minutes and cover as much distance as I can in five minutes. ANDREW HUBERMAN: Brutal. ANDY GALPIN: It is brutal. And it's amazing. And you get a lot done in five minutes. 10 minutes on the back of that is a very gradual bring back to Earth there. I actually, in that case, I don't need to do down-regulation breathing, because I've spent 10 minutes actually coming way back down. And the last two minutes or so of that is very deliberate, five-second inhale through the nose, five-second exhale through the nose while I'm barely just moving. And you end up being in a pretty good spot. So that, again, time-wise could easily be done in 30 minutes. And you'd be rounded off there. So the nice part about this four day a week split as well as a three day a week split is it does give you a little bit of flexibility. And so, what I mean is, maybe Monday your plan is to do the day one lift. And then, any number of things popped up in life. Just shift it back to Tuesday. Rather than saying Monday is leg day and then all of a sudden, something happened, you miss leg day. It's just you're doing these things in order. And you would like to get all four done in a seven-day span. But if it doesn't happen, fine. The next day you get to work out, you just go right back into the next workout. And it doesn't matter what day they land on exactly. For the three-day routine, that works very nice, because the assumption there is you really only have time for three workouts a week. And so, that's sort of implicit is there's probably some chaos happening in the schedule a little bit. And you don't really have the ability to lock in three days per week. If that's not the case, you can go. But we're trying to listen to the pain points that people have with exercise and see if we can give them some solutions for those. ANDREW HUBERMAN: Several things about this program are attractive to me. One of them you just mentioned, which is that by not rigidly attaching individual workouts to specific days of the week, one, in theory, could say, OK, it was-- I didn't get that much sleep last night. I don't feel-- I know that a lot of people say, what is feel? But I don't feel recovered, or like I'm going to get that much out of the workout tomorrow. So I'm-- or today-- so I'm just going to push it forward a day. And the ability to slide workouts forward or back by day I think is incredibly valuable for the consistency's sake. I also really like this idea of some of the long duration work coming a day after hitting the strength and a bit of hypertrophy work. So this would be the day two. One thing that I've experienced over and over is that if I'm very sore in a given muscle group, especially my legs, doing some low intensity cardio, whether or not it's a jog, or on the bike, typically for me it's a jog, or even skipping rope and walking does seem to dissipate the soreness. I'm sure there's a mechanism-- there has to-- there's a mechanism for everything, frankly. ANDY GALPIN: Yeah. ANDREW

HUBERMAN: But I like that arrangement. And then, I also like this idea of making sure that there's a workout for muscular endurance. Because I feel like unless I've been stuck without a good gym, or I've decided to specifically train bodyweight exercise, which I did a few years ago, I got really excited about some of Pavel Tsatsouline's work. ANDY GALPIN: Sure. Great stuff. Yeah. Amazing. ANDREW HUBERMAN: He has a book, *The Naked Warrior*, which doesn't involve training naked, although I suppose you could if you wanted. But it was really about no weights. And involved building up to pistol squats and one-arm push-ups, and things of that sort, even doing pull-ups on doors. And I discovered that some door frames are much stronger than others in hotels. [LAUGHTER] I just accidentally caused some damage there. But in any case, muscular endurance, I think, is a really interesting one that I plan to incorporate into my schedule. But that is, I think, is one that's often overlooked, unless people really have an aversion to weights and to machines. ANDY GALPIN: You're right. And it shouldn't be. Because it's pretty low-hanging fruit. You don't need a lot of equipment for it typically. It doesn't hurt that bad. You don't often get that sore out of it. And you're going to feel a nice wonderful pump afterwards. So it's great. And as we discussed many times now, it is quite effective at hypertrophy. ANDREW HUBERMAN: Yeah. I also-- I don't know if they fit specifically with muscular endurance. But if you look at the physiques, for example, on rock climbers, I mean, they have-- to me, of course they have-- usually the experienced climbers have pretty remarkable body compositions. They tend to be lean, and lithe, and flexible, all those things that many people aspire to. But the other thing is, their development always looks exceedingly balanced. You don't really tend to see climbers that are overdeveloped in the torso and underdeveloped in the arms, or overdeveloped in the arms despite all the climbing and underdeveloped relatively in the other limb movement. And that's true for women and men. It's not a sport that I participate in. But it seems like what they're doing is essentially muscular endurance training. ANDY GALPIN: Basically. Yeah. ANDREW HUBERMAN: Yeah. So there's really something there to be valued. So that's a four-day a week schedule with off days or rest

02:51:15 Tool: 5/6-Day Weekly Training Program, Recovery

days inserted as needed. And then just-- and continuing. For those that are a bit more committed to their fitness and want to do a five or six-day a week program, would you recommend just collapsing some of the off days, paying more attention to recovery, and

cycling through more quickly? ANDY GALPIN: Yeah, absolutely. You could combine that and just run that-- either one of those programs. So you could run that three-day week program back to back. Do it, get that done in six days. ANDREW HUBERMAN: Ah. So day one, speed, power, hypertrophy. Day two, strength, work with elevated heart rate, anaerobic capacity. And day three endurance. And then just-- and then just cycle through again. ANDY GALPIN: Yeah. You take day four off of the week. And then you go back again. So we would be having six days of exercise, one day off. And you'd be getting every one of those adaptations in multiple times a week. That is almost exactly how I would set up a six-day-a-week program. ANDREW HUBERMAN: Great I love the elegance and the simplicity of that and the thoroughness of it, because it checks off so many, if not all of the nine major adaptations to exercise that we've been talking about these episodes. And I suppose the one thing that I want to highlight and pose this also as a question is that early in our discussions, in a previous episode, you mentioned that so much of what people think of and apply as it relates to resistance training is borrowed from bodybuilding and hypertrophy training specifically. Which typically involves getting close to failure or failures, sometimes even involving rest pause, where you hit failure, then set the weight down for a few sections and repeat these high intensity techniques, accentuating the negative, so-called the centric, et cetera. In hearing about these protocols of three-day-a-week, or four-day-a-week, six-day-a-week, it's very clear to me that if one is not careful to omit that kind of thinking, and suddenly is taking their strength work and speed to failure, or is pushing too hard on muscular endurance to the point where you're just grinding out that very last push-up on every set, that the amount of soreness and the amount of recovery that results from these workouts might start to cause progress issues. So one thing that's in the back of my mind is, as you've described these programs is, that even though some of them are very brief or involve a minimum of time commitment, in particular a three-day week but also the four-day week schedule, that there is a discipline involved in making sure that you stick to the workout that you're supposed to do that day. And not go ham, as they say, and just throw in a couple of extra sets of bicep curls and tricep pushes, because you want to do that and you thought you could maybe you could get away with that. But you have to come back pretty quickly and do some serious, meaning devoted, speed and power work and/or strength work. And if you haven't been disciplined about not doing certain forms of exercise, I could see how the whole thing could crash quickly, and one could think, oh, this is just too much work,

02:54:06 Program Modification, Balancing Joy

or it's not for me. ANDY GALPIN: Yeah. ANDREW HUBERMAN: So this, I suppose, is now where the question comes, which is, what are some of the key points that people need to keep in mind when they embrace a program? How rigidly do they need to stay attached to today's endurance day. I'm just doing endurance. Today's strength day. I'm just doing strength work. I'm not going to take things to absolute failure or beyond failure.

ANDY GALPIN: I am absolutely happy with anyone modifying any of the sample programs however they would like to. My only recommendation for the question you just posed would be set your program. And then, if you're going to make a change, fine. But that is a change to your program. In other words, don't just make decisions every single day and make changes. If you're doing that, you might as well not have a program. And as we described earlier, there is clear evidence that having a program is better than not, regardless of the effectiveness of the program. And so, my general comment to that is, OK, fine, a day or two, you made some modifications. No problem. We're in a situation now where you're basically changing the workout every day as you go, then we just need to write a new program. We need to reassess where we're at. Because we need to have some structure. Look, the reality of it is, I change the programming I'm going to do the day of often because of any number of situations. I just don't feel like it. I way overestimated today. We talked a little bit in the previous episode about autoregulation, which is a style of periodization and program design in which you're adjusting based on how you're actually feeling that day, but with some specific structures. So you're going to take some measurements that day and adjust. So autoregulation is a very, very effective tool. You just need to make sure that auto is dialed. In other words, is it because your body actually needed something different? Or is it because you're now just getting a little bit lazy? Now you're just not feeling like it today. So there's a little bit of an impossible line to draw there. Both scenarios are real-- gray area-- a lot is real in the moment. And so, you just need to be a little bit aware of having some reality check, listening to your body, but then also being like, hey, no, I'm talking to you. I'm telling you this is the plan. We're going to do this. And staying within it. It is going to be challenging to progressively overload and therefore get a higher likelihood of success at your training program if you're just making decisions and changing the program right before you work out. You're probably not-- you're probably going-- for most people, you're probably going to choose

less or off more so than you choose more. Now, having said that, there are more than a few clients that have come through our programs where they choose more always. They add a set. They add an exercise. They add in another workout. And that can be OK. But we're going to track various markers on them. And if we see these things consistently going down, we're going to identify whether they are-- which phase of this overtraining thing we'll talk about next they're actually in. Some phases I'm OK. Some of them I'm not. If we're seeing certain things happen physiologically, we're going to make a conversation. We're also then going to really think carefully about why are you making this choice? Do you feel like the training isn't enough? OK, great. Let's modify it then. Are you not making progress? Or are there some other reasons why you're doing this? Obviously, I'm not a psychologist or therapist. But there are clearly situations in which folks dose themselves with far too much exercise for reasons that are not because it's productive to their training or goals. And if such a case, we would probably bring in somebody that specializes in those areas to clear that out and just make sure it's like, we're not doing this for anxiety issues or energy things. If it's, I just don't think the program's enough, OK, great. Let's go back. Let's look at our metrics. Let's evaluate our tests and go there. But if there's other reasons, then we may bring in somebody to have that conversation. ANDREW HUBERMAN: Yeah. Usually when I've seen people deviate from programs, it's because they tend to revert to something that they've done for a long time. It just feels really comfortable to them. ANDY GALPIN: Yeah. ANDREW HUBERMAN: And it worked. ANDY GALPIN: Yeah. ANDREW HUBERMAN: And it was giving them decent results. So they're skeptical to try something else. Or there is a phenotype of haphazardness sometimes, especially if people get really caffeinated before a workout and just want to throw something in. And then, there's a third category. And this is one that I've had to contend with a lot in my life, which is that I really enjoy training with other people when I have the opportunity. ANDY GALPIN: Yeah. ANDREW HUBERMAN: And a certain day rolls around where you're supposed to do something and not do other things and people say, hey, do you want to go for a long ocean swim? Or you want to train? And you end up doing some Kenny Kane, this one's for you, some ridiculous 20 wall ball CrossFit type workout. And I'm not acclimated for that sort of thing. ANDY GALPIN: Yeah. ANDREW HUBERMAN: And then it does tend to throw things off, not because-- no pun intended, Kenny-- because there's nothing wrong with a 20 sets of wall balls if you're-- that's part of your conditioning. ANDY GALPIN: Yeah. ANDREW HUBERMAN: But if it's not appropriate for where you are in your schedule, it really can

disrupt what you're trying to do. ANDY GALPIN: Yeah. ANDREW HUBERMAN: Even as a non-competitive athlete, like myself, years since I've competed in any athletic program. But as a non-competitive athlete, I think there's a beauty to and a really strong incentive to being disciplined about the program that one follows. As a mentor and professor that I worked with years ago used to say, I'd come into his office, all these ideas and things I want to do. And he'd say, let's constrain this walk. And then the question you always want to arrive at in a discussion with your students, as you know is, what's the experiment exactly? And then you go and you do that specific experiment. I think I view a workout the same way, that there are multiple adaptations, goals, and things that people are trying to achieve. Really knowing why you're there each time and really sticking to that, even if it means not training with other people. Or I always say, well, you can train with me, but I'm not going to train with you. [LAUGHTER] ANDY GALPIN: Selfish. ANDREW HUBERMAN: So that's one way to do it. But really sticking to a schedule is really what allows the progress to emerge. But that doesn't necessarily mean being antisocial. You can invite people along. ANDY GALPIN: Yeah. ANDREW HUBERMAN: But in this case, I'm telling people to be the host, not the guest. ANDY GALPIN: I have a little bit of a rule here. Maybe I should have answered your question this way. I actually like doing things totally different occasionally. So I'll do-- when I'm traveling, I tend to do hotel workouts. What I mean by that is, I will go down to the workout room. And I will do a set of 10 to 15 reps of every single machine in the exact order in which they are laid out. ANDREW HUBERMAN: Whoa. ANDY GALPIN: Just for the sake of fun. Just for the sake of, OK. ANDREW HUBERMAN: It's like the tarot card version of workouts. ANDY GALPIN: Yeah, totally. ANDREW HUBERMAN: It's like, whatever comes up, I'm going to make sense of it. ANDY GALPIN: And you just move. ANDREW HUBERMAN: Yeah. ANDY GALPIN: And those are typically things of like, I just want to move a little bit for jet lag and other purposes. That's often, I wasn't going to get to work out today. And so, now I'm going to do something to feel great. I don't travel that much, though, so it's not really throwing my things off. I also, I don't get a lot of free time. And so, if I am traveling, and I'm seeing someone I haven't seen in many years or, for the first time, I mean, we got to train together this week for the first time. ANDREW HUBERMAN: It was a lot of fun. ANDY GALPIN: I'm not going to burn that opportunity. My rule is this though. I'm not going to do something that's going to cost me more than three days. So I'm absolutely happy to get out there, and maybe tomorrow morning, or tonight, we go do something fun that's off my schedule. I'm in. I'm in 100%. I'm just going

to down-regulate a little bit. I'm not going to maybe do as much as you or as hard as you or whatever. I'll do more than I should. But if it costs me tomorrow, it was worth the exchange. I don't have a world record I'm setting anytime soon. I don't have-- I got many years. I'm happy to give up a couple of days of exercise to be a little sorer than I need to be for the exchange of a lifetime memory. And this stuff is so important to me. This stuff lands as true lifetime memories. I can look back-- many of my fond memories from my life are training sessions with friends, whatever it is, like doing jujitsu with somebody who's a world champion. You're just like, whatever the thing is, you're like, that was really, really cool. Absolutely worth missing two days. If it's going to be more than three days though, where I'm going to be so wrecked I can't work out for five or six days, then I'm probably like, all right, that's kind of nonsense. Unless it's just an opportunity where I'm like, I absolutely can't pass that up. So that's how I think about it. That doesn't happen too often with me though, maybe once a month. And so I'm like, OK, fine, I lost a day. Reality of it is it's probably more like once a quarter that that happens. So I don't really care. So you do want to balance joy and life. You don't want to be so rigid about your training program that it ruins and robs those experiences. Physical activity should be fun. Your fitness and your training should be something that makes your life better, not some task you have to get done so that 75 years from now you've hit some metric of who knows what. ANDREW HUBERMAN: Just alone in your room with your training logs. ANDY GALPIN: Yeah. [LAUGHTER] ANDREW HUBERMAN: No, in all seriousness, I think, you point to the richness of life. And you can draw these boxes like work, relationships, fitness, recovery. But the boundaries between those boxes are blurry, because-- ANDY GALPIN: Of course. ANDREW HUBERMAN: And I should say, I love training with people. I greatly enjoyed training with you this morning, not just because I was receiving so many useful tips. In fact, thank you. First time I PR'd in a number of things today. ANDY GALPIN: Yeah. ANDREW HUBERMAN: Thanks to your input in the moment. And that's an irreplaceable kind of gift. But mostly, it's the gift of getting to train with a colleague and friend. So I want to underscore, highlight, and put an exclamation mark behind what you just said. Thank you once again, and again, for giving us so much interesting, clear, actionable, and at times somewhat counterintuitive information in order to build out an exceptional training program to meet any of-- and in some cases-- all of the nine major adaptations that exercise can create toward aesthetic, performance-related, and healthspan lifespan, aka longevity goals. It's really a treasure trove of information there. And I look forward to our next discussion about how to best

recover from exercise, both within the exercise bout, and between exercise bouts, and in the more macroscopic structure of a week, a month, a year. I can't wait. ANDY GALPIN: I can't wait either.

03:04:47 Zero-Cost Support, YouTube Feedback, Spotify & Apple Reviews, Sponsors, Neural Network Newsletter

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