

## 10 Vital Moves to Reach Your Body's Full Potential – Kelly Starrett – #1049

You're listening to the Human Upgrade with Dave Asprey. Formerly Bulletproof Radio.

Dave Asprey:

Guys, if you don't know who Kelly is, you should. Kelly Starrett is a leading expert on mobility, is one of the very early guests on the show almost 10 years ago. I've become aware in my journey of biohacking just how important functional movement is. And if you go back to the Bulletproof Diet, there's even a section on that that says, "Look, you can eat all the right foods, you can do exercise that's way more efficient. But if you don't know how to turn on a muscle, it doesn't really matter. You've got to learn how to turn it on." In my case, I have probably some of the worst proprioception that you could find, at least I did. And there's still limitations in it. And what that is, if you've read Smarter not Harder, this is your body's sense of where it is and how it's moving in space.

Dave:

And Kelly has been a leading voice in saying, "Well, how do you access all of these muscles and all this connective tissue so that you can make it do what you want?" And I've learned a lot from Kelly. His first big book was, I believe, Becoming a Supple Leopard.

Kelly Starrett:

That's it.

Dave:

And then that's, there's been a couple more since then. And your new one is really effective, 10 [inaudible 00:01:31] Mobility, is what we're going to be talking about here. So I want to ground our listeners in this understanding that how you move in the world is probably not the best way or the most efficient way or the way that's going to make you live a long time and have working hips and knees and ankles and feet and wrists and all the other stuff. So his interventions have been groundbreaking for a lot of people and certainly fascia breaking for others.

Kelly:

Well, even the way you're describing the system now beyond just muscle and thinking that as an endocrine system, muscle system, which is, you've been on that tip for a long time. But even just the shift that you and I are explaining, talking about connective tissue and fascia, that represents a wholesale sort of acknowledgement and evolution in the readiness of everyone else to start to think about our movement system as a key aspect of our brain system.

Dave:

I love it. The brain body interaction there, and even your mindset, Built to Move as the name of a book is awesome.

Dave:

Even your mindset, Built to Move as the name of a book is awesome. So I want to go deep on our interview today so that we can really teach listeners how to think about this, how you think about this,

and maybe some tools that they can use. Because you go through so much in your book. And I'll just say, guys, if you liked Smarter not Harder, because it's very tools and here's what to do about this centric, you'll find the same kind of thinking in Kelly's book. Because it's that powerful and there's just so much you can do. It's like, "How do I know what problem I have or what I want to improve even if it's not broken? And then what's the right approach for it?" So you just have a very systematic perspective on it, which really, really works for the way I do it. And again, this new book is Built to Move, but if any book by Kelly is going to be very, very valuable for you.

Kelly:

Well, something I've seen in your evolution, which I love is that early, some of your early writing, my early thinking is really high concept 30,000-foot-view-principle based. And I think we have to start there. But fast-forward 10 years of data and experience and all of the sort of workings of the work that you're doing, the people you're doing it with, what you end up with is, as you see in your books, we're seeing more logistics. So we're seeing tactical, "What do I do in the morning first?" Not like a 200 paid treatise on the idea of what you should be doing in the morning. This is the implementation.

Kelly:

And I think that's where we're starting to see the evolution of this early wave of thinkers who we're all kind of came to consciousness and to awareness into our power a decade plus ago. We might have been working for decades before that, but that's when the internet kind of really blew up and we could start to really integrate and synthesize. But you are right that we're thinking about this at this sort of really behavioral level, and that turns out to be the big lever.

Dave:

And let's face it, when you came out with your book, when I came out with my early works, people got really mad. Like, "That's not how it works. You can't do that. How dare you upgrade your biology and hack yourself. And how dare you say-

Kelly:

That's right.

Dave:

...my movement isn't functional," and all these things. And so you kind of had to explain the thinking to get the critics and to get the people who had a broken perspective on reality, to get them up to speed. And so then, "Okay, maybe it's possible." And once you have that, then you go, "Okay, if what I'm saying is possible, here's what to do." because most people, even listeners, 20% of us are like, "Tell me everything," and the other 80% are like, "Tell me what to do because I have a day job." And I think you understand that as well for people too. Because we're not all going to be as knowledgeable as you are. I'm not as knowledgeable as you are about functional movement, never will be. So I could call you, because I could call you, or I could read your book and say, "All right, this is what to do." So what's changed, other than the fact that now we understand functional movement is the real deal. What's changed in fitness over the last 10 years? What have you seen in just looking at the world?

Kelly:

That's wonderful jump off point. Let's talk about fitness as a trillion dollar mega industry that doesn't really serve the people it purports to serve. So we have this fitness industrial complex and we're running

an experiment on society through this. Go to Instagram, drop in, try to understand what you're seeing. Try to understand systems, approaches, inputs, outputs. Does it make a better society? E.O. Wilson talks about the highest calling of sciences is to serve the humanities. And we've seen and believed for a long time that the highest calling of sports and performance, these high performance environments, were to transform community, transmute these ideas into things that made our families more robust. At the heart of upgrade is this idea that you are actually in charge of your own body and that [inaudible 00:06:54] it happens in the household, it doesn't happen at a large institutional level. No one else is coming to save you.

Kelly:

So if we said, okay, well if we take that as our premise, we have this trillion dollar industry, what's our third party validation? What's our objective measures? How are we measuring the feel goodness of all the things that we're seeing on the internet? Obesity, not good. Diabetes, not good. Low back pain, orthopedic surgeries, substance abuse. Choose something. ACL injury rates in kids. Choose something you give a crap about. And then let's say, let's look at inputs and let's look at outputs. And it looks like everything seems to be trending in the wrong direction, which means a couple things.

Kelly:

One is are we potentially making type one errors in the delivery or in the thinking? Is that the problem or is it the problem that we aren't really meeting people where they are, that we've done a really good job talking to this 1%, but we've left the 99% people behind in terms of bringing them along with base camp behaviors? And simultaneously is there so much change in their environment that they can't adapt as quickly, that the tolerances sort of have just been eroded because we suddenly are driving and we have access to such crappy food and there's so much technology and we're so much sort of sedentary creep.

Kelly:

Either way, what we're trying to do is say, "Hey, look, we've been working alongside the smartest kids on the planet for over a decade trying to win medals, trying to go faster, trying to get the brain to be a brain more effectively. How can we take those principles and recognize that these are the hinges that open the biggest doors and then go reapply that in a different way?" That's what we're trying to do.

Dave:

I really, really like that. And that definition of biohacking is change the environment around you and inside of you so you have control over your own biology.

Kelly:

Yes.

Dave:

Just like you said, it starts in your household. It starts in how do you do your daily practice and suddenly that gives me control of my biology? It does. And you could do, I don't know, a hundred burpees every morning. Is that a good idea?

Kelly:

It certainly could be. The real question now is, well, what's essential and how much? One of the things I really appreciate about your approach to movement is that it's not a doomsday prepping kind of always scarcity mindset. At some point you're like, you're fit enough and you're strong enough and your tissues are healthy enough, let's go do something important with that. Let's go use that time to do something else versus I need more pull ups so I can have more pull-ups so I can have more pull-ups. I never know what's going to happen. I'm chasing the Peloton fitness forever. And what we end up seeing is it's really ends up being this recursive cycle where people are never fit enough driving versus, "Hey, the goal of training always was to train for something." And then we can really have a rational conversation about what's the dose that's appropriate for me and my lifestyle, my age?

Kelly:

Well, suddenly you can start to now kind of winnow that down and say, "Well, there's some positions there that are really native. You mentioned already in our conversation about doing a 10 minute chaturanga. Well, it turns out a burpee is really just a dynamic chaturanga. That's really what it is." So what is it about those shapes that yoga and Pilates and training values? Global extension of the spine, taking the shoulder into extension, jumping up and knowing where you are in gravity. Is a hundred just a nice number? Probably. It's like the 10,000 step up. It's an auspicious number, but the real question is not how many burpees you need, but what's your intention and can you even do a burpee?

Dave:

As I understand the evolution of burpees, they were a measure of fitness for the military. But they were never meant to be an exercise. And that because they were the measure of exercise, we just did them as exercise. But biomechanically, burpees are maybe not great for you. If you had to do a hundred burpees every day for 20 years, are you going to be happier in 20 years versus if you've done something else?

Kelly:

That is really the answer, isn't it? How do we measure the impacts of doing those burpees? And the real question is as we get into movement and movement quality, when we define movement quality, we're always just saying, "Hey, we're looking at positions and shapes that create the most movement option, most movement choice, and allow me to have a skill." Because remember all movement is a behavior that we're repeating. That means it's a skill, it's a learned process. "Can I then apply this skill to some other thing?" What we've confused in fitnessing, we'll call it fitnessing, is whoever goes the fastest wins. Whoever did the thing. So as long as you went up and down as fast as you can, we valued that over could find your foot pressure, what ended up happening, how did you arrive in this position? How did you jump and land versus just do a bunch of work?

Kelly:

If we wanted to just have the work games, I would just have a pile of dirt. I would say move the dirt over here and whoever can move the dirt fastest is the best dirt mover. And that's fitness, versus seeing movement as a skill. And if we took a video and said, "Here are parameters for doing good burpees, I want you to jump and land with your foot flat. I want you to land in a good position. I want you then to sequence and stand up more effectively." And I took a video of your first one and your hundredth one, they should look the same. But what we see is we're starting to apply metabolic load and some cardio respiratory mode load. And if we see a degradation in your skill, we have exceeded your capacity to manage a skill. And that is the problem with fitness.

Dave:

So interesting. All right. Let's translate this. You're listening to this and you're maybe exercise sometimes, but not as much as you feel like you should. Where do you go from there? What's your first step?

Kelly:

I think what we have told people is that exercise happens in discreet one-hour units, and I have to go to a class, and I have to do this thing and it has to be all of these... "I need to warm up and activate and then I have to strength train and then I have to do some skill work and then gymnastics and then cardio and then..." "Dude, you got to get that done in an hour?" What we want to do for people say, "Hey look, let's start to view exercise lifting weights, and we know it's important. I think everyone's heard that message, but let's look at it as an extracurricular. Instead, let's look at physical practice as happening over 24 hours." So if you end up getting to the gym three times a week, good for you. And hopefully that gym is in your home, because we think that the revolution is, again, you can get some help and some coaching and talk to an expert, but if you want to see consistency, have a kettlebell at home.

Kelly:

That really is we can get a lot of this work done very quickly and it doesn't have to be in these hour long units. So if we're looking at total movement, if we're looking at steps and the variety of positions that you find yourself in throughout the day, you're looking at the nutrition, you're looking at getting sunlight and interacting with other, your friends, then all of a sudden what we're seeing is here are the things that we know make very durable, capable people that also prepare you for exercise. But also these practices end up being the way that we reduce something we call session cost. If you did a hard workout, we can measure the session cost the next day: wattage, nervous system arousal, force, production. If you and I go and smash 16 pizzas and five liters of beer, and the next day we measure each other, I guarantee you're going to suck.

Kelly:

And I'm going to go, "Dave, what happened to you?" And you're like, "Well, I look what I did last night." So we can see sort of inputs and outputs. But when we are working with, along with the best teams on the planet and the best athletes on the planet, these behaviors that you espouse around biology and control and light and movement and sleep, all of these things actually people don't realize, help us reduce the session costs. Because ultimately you can't outwork anyone anymore. That ship has sailed. What you can do is out adapt to that person. You can handle higher levels of stress and work.

Kelly:

So remove the idea of training and put in sick family member, red eye flight, work deadline. And all of a sudden what we realize is that these behaviors that we traditionally have applied towards athletic performance can be applied to the other aspects of my life to help me manage that stress or that life load. And lo and behold, we can reduce that session cost that has nothing to do with training. Do you need to deadlift? I like to deadlift. Do you need to have big, strong butt and hamstrings? Sure. Great. We can talk about that later on. But those things sort of happen, I think, a little bit independently of what the base practices are.

Dave:

All right, I got it. So you stack up your lifestyle and your exercise and you realize you could have more stress or less stress and your exercise will suck if the other stuff is too much. And if the other stuff is not present, you can have more exercise. But you talk about in your book, *Built to Move*, more about mobility versus exercise. So give me examples of mobility that isn't exercise.

Dave:

So give me examples of mobility that isn't exercise.

Kelly:

Sure. The first thing we should say is the human being is highly individualized, but there are key principles to all people. You need sunshine, you need to be around other people. We can make sort of generalizations. One of the things that we are pretty good about wrapping our heads around is what should your body be able to do in terms of range of motion? So every physician, every orthopedic surgeon, every physical therapist will say the shoulder should do these things within maybe five degrees. Some people think your hip only goes 130, and some people think it goes 125 degrees inflection. But ultimately range of motion is a pretty stable constant across the human species. And look, there'll be some variations, and of course you might have dysplasia, but generally the rest of your body, except for a sort of weird pathologic thing or a congenital thing, we really can say this is what is normal or expected.

Kelly:

And that shouldn't be a leap because we teach tennis to everyone, we teach swimming to everyone. Formal movement requires, especially the highest expressions of formal movement, require normal range of motion, full range of motion, complete range of motion. Not supernatural range of motion. So one of the things we're trying to do in the book through the idea of the vital sign, a movement vital sign, is to create movements and positions that allow people to quickly assess sort of where they are in terms of minimums on their movement. And so when we describe mobility as a sort of a greater concept, in *Supple Leopard* I was saying it's this objective measure of range of motion, and your control of range of motion, and the output is biomotor expression. What you end up doing, wattage, poundage, repeats, whatever it is.

Kelly:

Now I'm saying, "Hey, how do you want to move through the world doing the things you want to do in a pain-free way and in a pretty effortless way?" So if we look at your range of motion as a big corridor, what ends up happening because of a lot of reasons, including our lifestyles, is the corridor gets narrower and narrower and narrower. And pretty soon you're in a position where you can only squat one way with a certain belt on and the shoes and these Olympic lifting, and I have to put the bar in this position. You have less movement choice, which makes it more difficult to apply new skills or solve new problems or try new things, because you have spent your whole life bent over on a bicycle and now your hip is really good in specializing in that one thing. But it doesn't extend, it doesn't rotate, it doesn't, et cetera, et cetera. So how can we begin a conversation that's a little less technical and a little more person friendly around what is my normative range of motion? How do I assess that without movement tools but actual movements?

Dave:

Okay, you talk about 10 vital signs. And I so appreciate short lists and I do my best in my book to do the same thing. We're saying, "Okay, I read a whole bunch of words and some of them stuck. Some of them didn't. Give me the," I call the TLDR part of the book. Too long, didn't read. And give me an example of some of the vital signs and why you came up with them the way you did.

Kelly:

Yeah. One of the things that we have seen is so much noise around what people purported as to be the best practice. And oftentimes one of the things that's been a hallmark of your work is objective measurements. We are very keen on saying, here are inputs and here's how we're going to actually see the output. Otherwise, everything that I do is, I'm just a cult. People are like, "I love it. It feels great. I'm like feeling great is important, but I want to be actually see that I made change.

Dave:

So does heroin, by the way. Heroin feels great, doesn't mean it's good for you. Just got to say.

Kelly:

100% the cult. So what we've tried to do with the vital sign concept to say, if I say to people, your blood pressure's 120/80, that's not good blood pressure. And it's not bad blood pressure, it's just sort of average. But it allows you to start to say, "Hey, I should pay attention to this." So by creating these vital signs, some around objective measures of physical behavior. Again, the people who are on the upgrade platform are thinking this way, are very sophisticated about these things. But we realize that the number of conversations I've had with people with low back pain who have no idea how much sleep they're getting and how the lack of sleep is impacting their back pain. So it gives us an opportunity to say, "Hey look, seven hours is survival. We want to get eight hours. And that means you probably need to track it for a while or be aware of it, and you might have 30 to 60 minutes of disruption in your sleep, so you might need to be in bed for nine hours."

Kelly:

But we've been measuring so much around the human condition that's built on dirty data, that's built on processes of people not getting enough protein, that they're not getting essential fats, that they're not getting micronutrients, that it's really hard for us to see inputs and outputs. And what we have is usually a pharmaceutical intervention or another complex behavior that we're laying on top. So if we can give people some benchmarks around some physical behaviors and then some movement behaviors, then we can begin to start to sort out what's going on.

Dave:

Okay, so I'm just going to pick sort of an average person who maybe wouldn't know about your work, someone who's been working in their career for 15, 25 years, something like that.

Kelly:

Sure.

Dave:

Probably sitting an awful lot, because that's what happens when you have a job quite often. Maybes gotten in and out of exercise. Probably has a few extra pounds and just knows all right, things aren't right. So they pick up your new book and what's the first thing they're going to do after they read it?

Kelly:

Well what we're going to show you, first of all, is that of course we've become such realists about looking for and when people have agency in their life. So the first understanding of this thing is to say, "Hey, we appreciate that you're a busy person. You may have kids, you may have crazy demands on your time. When and where are you going to put these behaviors?" And you know what we, as you know and espouse so regularly, is that no system of the body works independently. No system is in isolation. That the brain is the most sophisticated structure in a universe attached to a biology that's equally as sophisticated in a interaction human society that is it in order of magnitude more complicated.

Kelly:

So what we have here is saying what's first? So for example, what we started with is the sit and rise test, which is a real simple, easy way to just look at how effortlessly you move through the environment. Now remember, some people really are jived or jazzed by the idea of longevity. And Juliet and I really love the idea of durability. We really want this health span to be rich and robust. We don't care to be 110 years old, we want to be 110 years old and having wild sex and stealing Corvette's and doing what we want to do. I mean the whole point is to get to the end of your life and then die or never die, but still not be trapped in a bed.

Kelly:

So the first reason we know that people end up in nursing homes is they can't get up and down off the floor independently. So here's this interesting test that is easy to measure, that allows you to just sit, cross your legs standing, lower yourself to the ground in that cross-legged position. Don't put your hands down. Don't put your knees down. Then can you rise back up from a cross-legged position?

Dave:

How do you lower yourself to the floor with your legs crossed the whole time?

Kelly:

You just cross your feet and you just go down

Dave:

Your feet cross, not your knee.

Kelly:

Yeah, just, yeah. No, no. Just feet. Just at the ankles.

Dave:

So it's just a sit down cross-legged basically.

Kelly:

That's right. Sit down cross-legged.



Dave:

I don't know, can I do that?

Kelly:

So what you just... Yes you can-

Dave:

Also around that, but generally I'm pretty sure I could do that with [inaudible 00:25:12]-

Kelly:

I know you...

Dave:

...about it. So yeah.

Kelly:

That's right. And that's the point. These vital signs should be pretty effortless. And what's happened is that for whatever reasons, again, session costs of our lives, old injuries, fear that we've been taught, "Hey, don't ever bend your knee this far." Some belief or some reason that you like to exercise a certain way can create a blind spot for you. But moving up and down cross-legged doesn't require a full range of motion, doesn't require you to be that strong. You don't even have to have ankle dorsiflexion. And doesn't take that much skill because you've been doing this your whole life. Look at any kindergartner sitting crisscross applesauce on the ground, they can get up and down effortlessly. So what we have here is the first sort of zazen cockpunch, where you're like, "Holy moly, my hips are tight. I can't even sit cross-legged." And our first intervention for people like that is to actually sit on the ground while they're reading in the evening for 30 minutes, while they're watching TV-

Dave:

Just cross-legged sitting.

Kelly:

Cross-legged sitting. Or sidesaddle sitting. Or 90/90 sitting or long sitting. The bottom line is that one of the ways, Philip Beach is this great writer talks about the body, one of the ways he believes that the body tunes itself is through ground sitting. Why? Because we've toilet on the ground, slept on the ground, worked on the ground for as long as there've been humans until the last a hundred and 150 years.

Kelly:

And I'm not saying that we need to go back and say, "What was our paleolithic friends doing?" That's the wrong view. The right view is how does the body require or get its inputs? But if I don't take my hips to these natural end ranges that are expressed when I sit on the ground, my brain and body will soon forget them. And that's going to make it more difficult to do the things I want to do, that's going to give me fewer movement choice. And as we're trying to untangle this [inaudible 00:27:07] knot of pain, rarely does anyone talk about range of motion as a component to pain. So if we want to restore or even

change how the brain is perceiving what's going on in the body, restoring what the body should be able to do is our first order of magnitude of business.

Dave:

And so this is one of the vital signs, can you get onto the floor and off the floor without using your hands or your knees?

Kelly:

That's right. And turns out there's some good research to support that.

Dave:

What percentage of people can't do that in the world today? Or at least in the US today, let's say.

Kelly:

In the US, I bet 70% of the people can't do it.

Dave:

Wow!

Kelly:

And maybe even higher.

Dave:

And if you go to India, it's probably like-

Kelly:

Zero. Everyone can do it.

Dave:

Everyone can do it, right? Because it's just built into the way people move. So we definitely have a problem there. Give me another vital sign that Americans would just fail at.

Kelly:

Walking.

Dave:

Okay, so how much walking or what... Most people think they can do that.

Kelly:

Exactly right. How do you and I democratize our thinking and democratize high performance? Like that is, if I had to give you a subtitle, I'm like Dave Asprey democratizer of high performance. You basically are like, "Here are the secrets and the best tactics to feel better and have a more self-actualized life. They're free. Go knock yourself out." I mean, that's really what we're doing. Walking is one of those things. Now what ends up happening is that walking gets a bad rap because it's not running, it's not high

intensity. And what we said for a long time was those people who were like, "I am a walker, I didn't identify that at all." And what I want people to understand is that walking is the chief and best way to get non-exercise activity thermogenesis.

Dave:

Yeah.

Kelly:

It's probably the primary reason why you can control your weight or can't control your weight is how much movement you're doing throughout the day, week, month, year. Walking is an easy way to just turn those dials to 10. Most people can do it pain free. The real magic though is that when we start to, again, think about how these behavior stack, like you I get invited in behind the scenes to a lot of high performance environments. And one of those groups happens to be Delta Force. So Delta Force is an elite army unit. And when they have war fighters who have a hard time sleeping, this kind of blew my mind, imagine all of the money and the technology that they have access to-

Dave:

[inaudible 00:29:33].

Kelly:

...And what they ended up... Everything. What they ended up finding was the most useful was asking their war fighters to walk 15,000 steps. They gave them a simple activity tracker and said, "Whatever you're doing, on top of this I want you to walk more." So as soon as they started walking 15,000 steps, they started to increase sleep pressure and lo and behold, they fell asleep.

Kelly:

And this is one of the sort of type one errors we get when we tell people that 45 minute peloton is enough, it's not enough total movement in the day to decongest your tissues, to get sunlight on your face, to walk with a neighbor, to dump your lymphatic system. Or to accumulate enough non-exercise activity that you actually felt like you wanted to go to sleep. So suddenly, we know from the research that really the magic, you get 50%... Like all-cause mortality drops 50% if you walk 8,000 steps. If you walk 12,000 steps, it's 60%. But in the meantime, I'm like 8,000 steps turns out to be a reasonable number for a busy person to start to sneak in.

Dave:

From what I've seen, 10,000 steps is bullshit.

Kelly:

Yep.

Dave:

It was made up by a Japanese company. The first company didn't make a pedometer that could count your steps. And they said, "Oh, this is great," and built a big campaign. I was CTO of the first fitness tracker that could track your heart rate from your wrist, the way your Apple Watch does today. And I did the research, I'm like, "There's no reason to tell people to do 10,000 steps."

Kelly:

Nope.

Dave:

8,000 is more scientifically validated. But for most listeners, unless you're listening to this while you go for a walk and you live in a place where it's not stupidly hot and sunny or stupidly dark and wet. We have to go for a walk at 4:30 in the evening wearing a flashlight, which was kind of Canada. Or now I'm in Austin a lot of the time. And in Austin I don't mind a little heat, but there's certain times you're not going to go for a walk for 8,000 of those. Plus I only have several companies I'm working on and Upgrade Labs get so much of my focus right now. So 8,000 steps. How about we say fuck that. Tell me something that works in less time, Kelly. Come on man, save me some time.

Kelly:

So what we can start to think about now is, well if this movement is required so that my muscles can contract, so I can dump my lymphatic system, what are the other ways I can be thinking about my environment? You've got two thumbs, you can shape your environment. So what you start to see is if your only movement choice is to sit in your desk, we're not saying sitting is bad, we're not saying standing is good, but you're going to have to be creative, especially in these environments, to say, "Where can I move more? How can I walk around more? How can I stand and fidget more?" Because maybe it's not just about the steps, maybe it's about, "Hey, if I perch against a bar stool," like I'm doing right now, "then I'm loading and I'm getting more total movement in it." That's the thing I think we can't necessarily sort of shunt around or short circuit. But what we know is you probably are not going to be able to get eight to 10,000 steps or 6,000 steps in a single setting.

Kelly:

But you have the whole day to start to say where are the places where I have agency and I can get more movement in? Having a standing station gives you a choice, then you can walk over and sit on the floor. Then you can maybe, hey, go for a quick walk around your island. How do you fidget more? And one of the reasons we love this idea of fidgeting and being in constant motion is that it helps us to, those of us who like to exercise... I have to exercise otherwise I'm going to be addicted to all the illegal drugs and go to jail... Is that this is the way I self soothe is that if I'm moving more, I'm more readily able to switch into exercise without normal enormous warmup. I'm also able to exercise and then continue to be in motion so that I don't have that phenomenon. I ran a marathon, then I jumped on an airplane and I got off and I was crippled, which I think a lot of people can relate to, right?

Dave:

Oh yeah. So you're looking at reducing the friction costs, the resistance.

Kelly:

Yes.

Dave:

The doing exercise, which is a major thing. In fact, that's one of the reasons Upgrade Labs exists is that there's so much value in a short period of time that it helps to overcome the resistance to going, "Well, I

just got more so it was worth it." Otherwise, it just that the initiation effort is so much that it doesn't happen.

Kelly:

Yes!

Dave:

So you've reduced your initiation effort, you've built it in to the way you move. And you're making me think about it now, I just moved into this house and I'm still getting it set up. I didn't bring the thing that turned my desk into a standing desk because frankly it wouldn't fit in the moving truck. But I have a more mobile environment when I'm not doing podcasts. So I'm just realizing there's a couple places where I could put a mount for my phone so I can still do Zoom or whatever, but I could be standing rather than trying to make my main studio location a standing location, which doesn't seem to work very well because cameras.

Kelly:

Yeah, and that's really important. I don't want you to have to think, "I have to..." Look, I worked with this executive and we talked about it in the book, and I'll say it here, President Obama. And one of the things that I was tasked with was that he was not feeling great sitting down to write his book. And what was happening is he said, "I can't sit at a standing desk and write, it doesn't work for me. I have to sit." And he had a beautiful desk, a [inaudible 00:35:11] desk, but he's like, "I have to sit." So what we then thought about was, "Well, how do we have a chair that requires him to move more or recruit more? How can we put his foot on something so that he can fidget more? How do we create, if this is the way, then how can we create and be clever enough to shape the environment so that the outcome is the outcome we want?"

Kelly:

And I think fundamentally by giving people these vital signs and saying, "Well okay, my environment, I can't walk this 8,000 steps. Or I find difficult." But I know that now that more movement is important, what does that look like? How can I do that? Does that mean I walk my kid to school in the morning when it's cool? Does that mean that I take a one walking meeting just cruising around my house? I mean, there's so much agency once you know what the problem is, then we're like, "Hey, go solve the problem in the way that makes sense to you."

Dave:

Okay, I like that idea. There is a change you can make and it might be a small thing. For years, I sat on a bouncy chair, like a bouncy ball kind of chair early on when I was doing biohacking. And eventually I just was like, "My body feels pretty darn good, and it's just easier to sit in a quote normal high end ergonomic chair. But I do my best to move around." I'm probably not going to do eight or 10,000 steps a day ever, because there's other things I want to do with my life more. But I do whole body vibration and I might do blood flow restriction training. What are things, say someone only has 3000 steps a day in their life, how do you replace the benefits of that longer exercise? Are there any?

Dave:

How do you replace the benefits of that longer exercise? Are there way?

Kelly:

Well, I think that's a really interesting question. Let's look at what's happening in the walking. We're strengthening your feet, we're getting sunshine. Can I do that in another way? Yes. Can I work on my balance? Yes. Could I jump into some Normatec boots and decongest? Yes. I mean I think what we're always starting with is what's our simplest intervention that can capture the most people? Then we can start to say, what are your resources and what are you going to do that's the most sticky and the most consistent? Oftentimes, as you know and I know, people love to invest in the big fancy thing and then they don't use the thing. And so oftentimes as well, "I get a massage." "Really? Do you get a massage every day?" "No." "Do you get a massage once a week?" "No, I get a massage every two weeks." Is that sufficient to make you feel great and to maintain your range of motion? Well, let's test that.

Kelly:

And I think that's what's really nice about what you are starting to ask people to do is say, "Hey, let's look at inputs critically, and then let's start to look at outputs and start to find out what is our sort of minimum." Again, if we're looking at population health, what we're seeing is that most people are moving two to 3000 steps. They're obese, they're diabetic. They're sedentary. That doesn't mean then that I got a big reduction because I do all these other things and I walked 8,000.

Dave:

Yeah.

Kelly:

Start running experiment. Well how if I had one more thousand steps, did I sleep better? Do I have a sleep problem in the first place? So again, I think what's nice is... I'm a reasonable person and if you're hitting three or 4,000 steps and you've got all this rich diversity in your body and how you move and the practices you're doing, the nutrition, you're probably going to be okay. And I'm also, "Show me your sleep data," and you're like, "Oh, I sleep like a stone." Look at all your deep sleep, super cool. It turns out what you're doing is working. And it may work now, but we just want to be aware that things change as our biology changes and stress changes and there may be a time in your life where you can't do all the things, but maybe it's just you need to walk [inaudible 00:39:30] more.

Dave:

Got it. It's something that I've noticed because I had a couple surgeries on my foot, which totally affects how you walk for a while. So I've been really conscious of walking in range of motion, some congenital stuff. And I did notice when I was walking less, as I was recovering, that it does do something, but there's no way I'm doing eight or 10,000 steps a day. My tracking devices, don't tell me. And I lost the charger of my aura ring. So I'm like, "I'm going to go without a tracking [inaudible 00:40:02]"

Kelly:

Well, you don't need your Aura ring to tell you how you feel. I mean, I think that's-

Dave:

Yeah.

Kelly:

...how do you feel? Let's go ahead and start with that. And if you're so shut down you need to need a device... I like the Aura ring, I think it's fun to look at my sleep. I look at it, sometimes. I forget, sometimes. I like to see inputs and outputs. If I eat late at night, if I eat earlier in the night, if I eat this, if I take this magnesium, does it change those variables? I think it's a fun tool.

Kelly:

But to your point, how is it going for you? How do you feel? How are you moving? What are the quality of your tissues? Then we can begin to normalize or start to say, "Hey, let's turn this up and turn this down." And if, look, I have congenital high blood pressure, my blood pressure is always a little bit higher than one 120/80. Doesn't matter how much aerobic work I do or what I eat or what... It's like we have a family tradition of freakishly high blood pressure. Mine is managed at a reasonable, not a great level, reasonable level. And I don't worry about it anymore because I know I'm impacting, doing all the things that I possibly can do to manage my own personal biology to the extent that I'm able.

Dave:

What do you think about those healthcare plans that require people to sort of fit into a certain set of variables, like you have to do this number of steps and you have to have these blood results and all... Is that a good innovation because you get lower insurance costs. Or is that a bad innovation, because they're forcing people to do stuff that might not be a good fit for them.

Kelly:

Look, people's lives are their own and there is an immense tolerance within the human body to buffer and manage a whole lot of things. Institutions, institutionalization, institutional thinking, let's use an example. Kaiser the healthcare company will, if you come in with high blood pressure, they'll also start you on a statin right away. If you come in with high lipids or high cholesterol, they'll also start you on lisinopril right away. Why? Because they know from the data that no one is going to change their behavior and that they're more likely to save money and save lives if they drop these interventions on you on top.

Kelly:

Is that good medicine? I argue it's not. But they're not environmental behavior lifestyle experts. They're on the end of the pointy spear, when the dumpster is on fire and rolling down the street and then Kaiser shows up and is like, "Hey, let's just give everyone a fire extinguisher." Versus asking where do people have agency, who's in charge of this, and why are they making the decisions that end up in this disease state? So when you have a system organized on dirty data and disease state, your intentions are, "Hey, I can save you some money if you engage in these behaviors." That is super offensive to me.

Dave:

I agree. You should be able to craft whatever makes you feel best. And if it's 6,900 steps per day combined with putting a lot of butter on your food, regardless of whatever stupid lab tests they want you to do that are actually not tied to living longer or feeling better, and that's what works for you. The fact that someone wants to charge you more for that, I kind of think the people putting those programs together are the enemies of humanity and we should not put up with that kind of behavior.

Kelly:

We can always ask who is the stakeholder here?

Dave:

Yeah.

Kelly:

This is one of the things that we see a... Look, I'm a physical therapist, I'm trained classically as a physical therapist, and there's a whole bunch of issues in physical therapy. But there's no incentive for, and I'm not trying to raise flags and be a conspiracy theorist, who makes money on this disease state? Who is in charge of my health? And ultimately that company doesn't know the demands of my life, they don't know what's going on with my family. They don't know what's going on with my work. This is why it's so important that we view the household as the functional unit of change in society. And giving the household, whatever that makes up, whatever the constituent of that is, better tools and better solutions so they can better integrate it in that hyper-local situation.

Kelly:

Coming top down, yes we can say things like, "Hey, at school kids need to move more. We need to have more recess, we need to have more play." We can make those decisions. But basically everywhere else, man, we really need to give people better information and show them how they can integrate their lives so that they can feel better and do the things they want to do. Pain is not a medical problem. Let me just say this out loud again. And this may be get me banned on the internet. Pain is a complex psycho-emotional component. It's highly individual. And if you have red flags, pathology, disease, fever, go see a doctor, go see a health practitioner. But pain is a request for change. It doesn't mean tissue trauma, it doesn't even mean tissue damage. It's your brain asking you to change a behavior.

Kelly:

And if we start to view pain that way, suddenly we... Like you're fidgeting in your chair because your brain was like, "Hey, we've got to move around a little bit." If we start to change pain and give people tools for that, man, we really can start to change radically who owns pain, how that's managed, who takes care of it, how do we self sooth? But if we say, "Hey, pain is always a medical problem," then people are just going to reach for bourbon and opiates and weed and whatever else they need to do to make themselves feel better.

Kelly:

So this is one of those things where I'm like, hey, we have commoditized pain and people have made trillions of dollars on pain. That is really not a very good argument or even a rationale when we know that everyone experiences pain, you still go to do your work, you still go do your job. All the athletes I know have pain, so why don't we have a different conversation? That's a great example of the sort of type one error in this whole systems approach to trying to manage complex human biology.

Dave:

I've started to look at pain as a signal from the body to the brain, rather than a brain centric phenomena.

Kelly:

Yes!



Dave:

And it could be a pain because you're injured and you need to take it easy for a little while.

Kelly:

That's right.

Dave:

And that's a beneficial and healthy type of pain. Your leg is broken, if you walk anymore on it the bone will stick out through the skin, so don't walk on that. That's good. And then there's remembered pain, which is the body saying, "The leg was broken, it might break again, therefore here's some pain when you walk just to make sure it doesn't happen again," because the body is a coward. And it's that second kind of pain that functional movement really excels at. And there's probably a third kind of pain, which is, "Something is triggering me," whether it's a toxin or an emotional situation. And somehow the body decides that that must be how you move or something and it gets stored in a tissue in your hips or something. Is that a good model?

Kelly:

I like it. I think we could expand on it.

Dave:

Yeah.

Kelly:

But what's nice about that is the ideas that it gives me as a person to be able to manage or self sooth. Again, self-soothing is reasonable. "I'm in pain. I'm going to pull my hand out of the fire. I'm not going to walk on this broken leg." But it also respects, because what we came out of definitely a biomechanical centric model that the joint is not part of a living tissue system but a joint is a specific mechanical part like your car that is unfeeling. What you've just said there is really important. That I have all of these top down approaches, that I can have some ideas around pain science. I have the psychology of this. How I hang out with my friends and family and talk about the language I use. But I also have this bottom up approach. That I can have healthier tissues, I can have less inflammation, less congestion. I can make sure that my tissues are well hydrated.

Kelly:

There's a whole lot of things that you can do from the bottom up that change how the brain is perceiving down. What you end up, sort of that third bucket is, "Boy, I can massage, I can put all these inputs, I have dry needling, I have all the things that I could possibly do that humans have been doing to help this. I have this top down approach and I have these environmental approaches." And what we find is it's probably some combination therein of a lot of these things. And when we start to turn the dials on any one, but specifically when we start to turn the dials on all three, what we start to see is that the brain goes, "Oh, that's not a problem anymore." Your back hurts until a beautiful person walks into the room and suddenly your back doesn't hurt anymore. What's going on with that? So let's appreciate that there are lots of triggers, but even the way you're describing it is a lot more sophisticated than, "I have pain. Here's some Vicodin and bourbon. Let me just mask that pain." Because that doesn't change any of those systems.

Dave:

Right. So there is a way to reinterpret pain signals and I find that some of the more advanced work on pain does that. But some of the biggest pain I've had in my back was I was just functionally moving and breathing wrong. In fact, I want you to tell me in your language from your book what I was doing. I'm going to demo something real quick, see if my camera picks this up. Let me make sure I can see myself.

Dave:

So what I've been doing pretty much my entire life here... Is this going to work? Yeah, it's going to work. All right, so there's like ribs right here. So when I would do this, and this was my suck your stomach in, but I was flaring my lower ribs. And I finally learned how to bring my ribs in. And when I learned how to bring my lower ribs, instead of doing this to do this. And I'm not trying to suck my gut in, I'm just tensing everything so you can see it. What this motion of this rib to be able to take the rib in and out like that, totally took away my mid-back pain that I'd had forever. And it really changed my meditation practice as a result. I mean, how could you go 45 years holding your ribs out without knowing it? So what was going on with that and why did that change so much?

Kelly:

First of all for everyone listening, it's a useful tactic to change the narrative from good and bad to in that position that you had learned, that you taught yourself, that worked for you as a strategy for a long time until it didn't. You actually weren't working at full capacity.

Dave:

It's true.

Kelly:

So what we end up doing is saying, "Hey, we like this position," because it has greater capacity, it has greater access to your innate physiology. You can move more effectively. You put yourself into a position where your diaphragm worked differently. And I would argue based on all the things we know about how breathing mechanics work more effectively, which means we increase your VO two, we increase your tidal volume. But you experienced it as when I change towards teaching or change towards moving towards a higher expression of the movement, then your brain either said, "Well, that's new and different," or, "hey, we've unloaded this sensitized tissue," but whatever the mechanism is, we don't care. What we care was, "Look, that's a better technique."

Kelly:

So suddenly martial arts, yoga, CrossFit, Olympic lifting, gymnastics, swimming, all of these things become really, really rich places that teach us about what the highest expression of the body is. And when we teach people those things, suddenly you can move away from this argument that all movement is good and we're movement positive and however you want to do it is fine. That's true. One of my favorite coaches is a guy named Franz Bosch, and he has this great saying that there's more variation in waltzing than there is in sprinting. And at low load, low speed, low consequence, your body can do just about anything. But we tend to teach in our model towards the highest expressions of the movement because someday you might want to run and jump and leap and twist and maintain your movement choice.

Kelly:

And you can choose to operate at 50% or you can choose to have techniques that allow you to operate at a hundred percent. You just chose a different technique and that technique had much better utilization of your innate physiology and it changed how you experienced that less effective position. Does that make sense?

Dave:

It totally makes sense. And one bonus on that is, I've been doing Art of Living and other kinds of breath work holotropic for many, many years.

Kelly:

Yes!

Dave:

In fact, it's a neat connection because I interviewed guru Sri Sri Ravi Shankar, who invented Art of Living, like 50 million people do this breath work. And I asked him about how to overcome fear, and he actually said curiosity. And I just realized I was using curiosity to overcome pain and pain is a manifestation of fear. So it all comes full circle. But the idea-

Kelly:

But then why wouldn't those people have been working on this forever?

Dave:

Oh, they have.

Kelly:

Human beings have been thinking about the problems of human beings the second we had consciousness.

Dave:

Totally true. And I mean, geez, I think Ayurveda has a very long history of doing that, all those traditions. So even with all that breath work, I had missed that thing. And then one day I don't exactly know what triggered me to feel that. And all of a sudden there was a shift in my breathing, even though I'm very well-trained on using all parts of my lungs. So my breathing changed. And it's funny, because one of your 10 vital signs in your new book is exactly that. It's deep breaths and understanding how to use the different parts of the lungs and all. [inaudible 00:54:11]

Kelly:

And let me just say in a very cursory way, we are hoping that people who've never thought about this... Look, if you come to see me with low back pain, the first thing I'm going to show you is breathing. The second thing I'm going to help you do is make sure you're decongesting and walking more. We're going to talk about your sleep and then we're also going to talk about your hip range of motion. These things or how well you're functioning and how well your spine moves. These things are innate to the human being. Why is it that you have to go see a professional to learn how to take a deep breath? That's crazy.

Dave:

Doesn't make any sense.

Kelly:

It's crazy. Nope.

Dave:

Not at all. Beautiful. Well, we could talk for hours about this, because functional movement is so fascinating. What I'm beginning to understand about just all of this is that we have this idea of a meat operating system, all these invisible systems that are hard to access in our body. And they send us, or the body sends us signals. It lets us see some things, but not other things that are right in front of us. And it sends us pain when maybe it doesn't need to send us pain. But it figured out that's the best way to manipulate what you do so it gets what it wants.

Dave:

And we have all this complexity in there. And functional movement exercises are one of the important ways of getting a signal into your operating system so it'll do what you want. Because otherwise you'll do what it wants. And what it wants you to do is really lay around on the couch and eat Ben and Jerry's so you don't starve to death, and make sure you have sex often enough to reproduce the species and then get back out of the way. And I just don't like its agenda, so I'm going to have to do what I wanted to do.

Kelly:

I really appreciate that. I agree. I think you're going to be 105. What is the, I just saw a statistic that 50% of the fifth graders are going to be 105 years old. So if something is happening in our ability to keep people alive, not keep people stoked and feeling good and living a life, but alive, then we need to start thinking differently about what that looks like. One of the central tenets of your idea is really unlocking your true potential [inaudible 00:56:30] your biologic potential, individualized biologic potential. It's not all the same. I don't have Dave Asprey biologic potential, but Kelly Starrett is enough to live in a way that really allows me to increase my quality of my life for a long, long time.

Kelly:

And I think the problem is today, we're so obsessed with inputs and outputs for tomorrow that it's difficult for us to be thinking in this scale. It's a hard human thing to think about. But if we can measure today and tomorrow and we can start to think about life, retirement planning, et cetera, we can be able to think, "What do I want to do in 10 years? How do I work backwards from that? What do I want to do in 20 years? How do I work backwards from that?" And that's all we're saying is that here is a set of base camp operations that will give you a level playing field, that make sure that you don't have some blind spots, and then use your big brain to turn up and turn down the things that turn you on and give you the biggest bang for the buck. Then go live your life.

Dave:

Love that perspective very much Kelly. And it comes through in your book and your content. You've been sharing so much for so long. Your website is The Ready State, and the new book is called Built to Move. And thanks for continuing to think about this and explain it in a way that makes it so you don't have to be an expert in functional movement. I'm not, I know enough about it to be dangerous, haha. But I do look to you as an innovator, leading innovator in that space. So totally worth your time, if you're

listening to this, to pick up Kelly's new book and just think about those 10 vitality signs. How many of them do you have? You should have all of them if you want to join me on the path to living to 180. I don't know if I would score myself 10 out of 10 on all of them, but I think I'm in the top 10% of people on most of them, which is good enough for me.

Kelly:

I'll take it. We're always talking about the 10 out of 10 club. But just before we wrap up, I just want to say I was at the Human Upgrade conference this last year and so shocked and thrilled at how sophisticated the crowd has become. I mean, 10 years ago we're like, "This is your body," and people were like, "That's amazing! I have a body, I had no idea." And just to see how sophisticated and nuanced and reasonable people become, it's really working. And I mean, the glacial pace is the breakneck pace, but please, please, please keep holding these spaces for us to come and innovate and tinker and share ideas. It's a crucial feature of the system that's going to get us to the end.

Dave:

I will do that, Kelly. And thanks for the mention. Guys, [biohackingconference.com](http://biohackingconference.com) June 20th, Orlando. Kelly, are you coming this year?

Kelly:

We'll see if I can... I have got a couple things going on, but-

Dave:

All right.

Kelly:

...I'm trying to get there because I really had a great time last time.

Dave:

It's a place where you get to meet lots of cool people. And if not, we'll miss you this year, but come next year. And there's always a mix of functional movement in there. because functional movement [inaudible 00:59:42] the biohacking. You must do that if you want to achieve all the results. Doesn't have to be the only thing you do, but it matters and it maybe doesn't get enough attention. So you're the guy who's shining the light on it in a really beautiful way.

Dave:

So thanks again for being on the show and...

Kelly:

Thank you very much.

Dave:

I look forward to seeing you in person sometime soon. And to your next book after this one.

Kelly:

Oh boy. Thanks my friend.