

From Munich to Mobility WOD with Kelly Starrett
PMR 136

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Tony: Hey Paleo nation, I'm Tony Federico and you're listening to Paleo Magazine Radio, the official podcast of the original Paleo Lifestyle Publication. Most of us spend our days in front of computers, on the phone or in our cars, working, stressing, succeeding and striving all while remaining seated and stationary. This wouldn't be a problem if our ancestors were sedentary species like pine trees. Unfortunately for us our lineage comes from a dynamic group of animals who made their way through the world by employing a broad scope of movement patterns.

Squatting, lunging, gripping, hanging, pressing, pulling, twisting and sprinting, we were meant to be on the move. Our biological machinery demands more than just a daily dose of gym time. To truly thrive we need to reintroduce movement into our daily lives. Today's show is part one of a two part series dedicated to the idea that movement is more than just exercise. Features a conversation with world renowned movement expert doctor Kelly Starrett. Best known for his hit Mobility WOD Youtube channel and New York Times best selling book Becoming a Supple Leopard. Doctor Starrett has dedicated his life to fixing broken bodies and in our conversation Kelly and I discuss what it was like to grow up in a mountain town outside of Munich. The uh-huh moment of satori he experienced while surfing.

His early influences and mentors in the world of CrossFit and weight-lifting, what he learned by studying the movement traditions of martial arts, yoga and gymnastics. Why we need to stop fitnessing, how to cultivate physical competency in kids. The problems with physical education and how to fix them, what he thinks about the statement, "Sitting is the new smoking." How to sit correctly, transitioning to a standing workstation and how you can join the Mobility WOD movement.

Before we get started I want to take a quick moment to thank the sponsor of today's show, Ancient Nutrition. Makers of the world's first real bone broth protein powder. Since bone broth protein is made from actual bone broth, you might be wondering how it tastes, at least that's what I was thinking. I asked Ancient Nutrition founder Jordan Rubin what his friends thought of the flavor.

Jordan: I went to a friend of mine who works and anchors the NFL network and played in the NFL for eight years and had him try this. He was using another protein that was very in my opinion poor quality but one of the top neurosports nutrition brands with artificial sweeteners, he said, "I'd drink this everyday."

Tony: Not only do pro athletes love bone broth protein, apparently kids do too.

Jordan: My eleven year old is like, "Dad, I didn't have my bone broth protein today."

Tony: To try bone broth protein for yourself, go to ancientnutrition.com and use the product locator to find local retailers of Ancient Nutrition products near you. All right folks, it's time to mobilize, Paleo Magazine Radio starts now. All right

From-Munich-to-Mobility-WOD-with-Kelly-Starrett-PMR-136

everybody, I'm here with Kelly Starrett aka K Starr, author of the new book Desk Bound, creator of Mobility WOD, famous for helping people to fix their bodies in all sorts of ways. K Starr welcome to the show.

Kelly: Thanks so much.

Tony: Before we get into your new book which I'm really interested in because this is something that I have a lot of personal experience with. I'm thinking that you might be able to explain to me maybe why I got so jacked up after sitting in a chair for so long. Before we get into that I want to know a little bit about how you got into all these movement stuff. I know you're an early CrossFit box owner, you're a doctor of physical therapy but where did this love of movement and this love of fixing people's chronic aches and pains, where did that come from? Where did this whole K Starr story start?

Kelly: Here's the story, I have been obsessed with performance and technique for as long as I can remember. I have said in many places that I remember being at ski camp as a kid and learned to kayak as a kid. Even just the way my friends and I would push each other and progress when we were freestyle rodeo kayaking or learning any other skill. It was all about technique and being in an environment where we saw patterns, we learned off each other. I think that aggregated over the time where I raced, I did a bunch of ski racing as a kid, I raced mountain bikes, I raced kayaks-

Tony: Could you place us, is this out in California where you are currently or where was this all happening?

Kelly: Actually I grew up in Germany believe it or not-

Tony: There you go.

Kelly: In a little mountain town south of Munich and everyone rode a mountain bike, it was heresy to take a car anywhere. I grew up in this environment where everyone was a mountain guide, everyone boated, everyone climbed, everyone skied. I played soccer and all these traditional youth sports but fast forward through high school I was able to have some success in some high school sports because I had transferred some of these skills over into how do you pick up a new skill? How do you learn? How do you obsess about technique? Then you'll fast forward to college, I ended up paling on the national slalom team and the national whitewater team and begot a long-term obsession or again with technique and performance and mechanics.

I think people forget sometimes that just ten short years ago, fifteen years ago was the dark ages. 98 was my last year, 99 last year of racing full time, the internet wasn't a thing really. You couldn't just reach out, listen to a podcast or grab a book, there was no Youtube to show you how to do things. There was a lot of trial and error then I stumbled into a community of people pretty heavy into a trial and error model. I went to school in Boulder, it was the roots of Shane McConkey and free skiing and my roommate teaching

kayaking in the summer was a doctor now but a famous skier named Scott Gaffney. His brother Rob Gaffney is a freestyle skier and a film maker. I was just in these communities of people really in this nascent, extreme communities of people really testing, retesting and sharing.

That was our model for how we progressed everything and it was about safety and performance and mechanics. Then lo and behold I stumbled into the professional paining experience. That served me well until one day my hand went numb and I couldn't turn my head. I fell into that classic route of I was outworking everyone, I was doing everything everyone said we should do. Of course my mechanics were terrible, I did zero soft tissue work, nutrition was dubious at best, early zone practitioners back in the mid 90s. All I can tell you is that that was when I had an awakening that I was doing what everyone asked and I had fallen apart. I started asking these greater questions about, "Why is it that every woman on the national team has had shoulder surgery?"

"What is going on here?" Everyone told me, "Hey, this is to be expected. We knew this would happen to you. Why? Because it always happens when training volume is high and we're looking towards team trials or Olympic trials and you're paining twice a day and training another time, people break and sometimes that's normal." I was like, "You knew I would break?" Fast forward a little bit longer I was out while surfing one day at Ocean Beach here in San Francisco and I really had this moment of satori that I needed to go to physio school. That seemed like the right approach to be able to tap this interest in mechanics and performance. At the same time my first year of our doctoral program in physical therapy I also discovered CrossFit.

Which means that I was exposed to the writings of Mark Rippetoe, the early writings of Greg Glassman and coach Mike Burgener, amazing [Olympics 00:08:51] coach. These guys really took me under their wing and taught me the basics of gymnastics and of programming and powerlifting and weightlifting. I realized that I just had gigantic holes. In my own personal training ... Because I'm a national champion, I was a really good athlete yet I had these big movement skill goals, I was weak, I wasn't very fit. I was fitter than all my friends but in the skill things I had such big gaping holes in my physical education.

I remember even having a conversation with my mum after I was in this and I was like, "Mum how come I wasn't in gymnastics or dance? Didn't you love me?" She was like, "What? What are you talking about?" I was like, "I should have been in dance mum." She was like, "You were a big kid, I don't think you could have thrived in gymnastics." I was like, "I was supposed to be a gymnast, I'm a tiny dancer." All of those things came about as continuation of this obsession about mechanics personally as a way of understanding performance because that was how I learned skills, how I practiced skills. Literally what we're seeing today, I got my first job seriously teaching adults whitewater kayaking when I was fourteen. My mum's a professor, I have been teaching my entire life. I would say I ended up here in retrospect it

looks like a straight line but how I got here is definitely way leads to way, needless to say-

Tony: There's a little slalom getting there.

Kelly: That's right, we did some upstreams, I missed a few gates but what's amazing now is we are ... I've said this before many times ... We're in a little bit of a Renaissance and the way of thinking about ... Think where we are conceptually right now. Because let's be honest even in the food space, in the fitness space, it's a crowded, crappy competition heavy space where there's so much noise. This Paleo secret squirrel powerlifting program gets you the secret results. I think we lose sometimes the gestalt, the idea, the force for the tress which is what is it humans are supposed to do? That really clarifies, "How should I be eating?" "Well, this is the way we have eaten, looks like it's food." The irony of course is that in performance athletics right now the revolution is whole foods again right?

Tony: Right.

Kelly: You can't outperform a rice cake with nut butter. That's a pretty rock and fuel source, you know what I mean? White rice and eggs after a bike ride it's like, "Yeah, he's going to have a hard time beating that." What I think is interesting is we can apply those same concepts of fundamentalism, what does it mean to be fundamentally a human? Start asking the question, "What is it my body should be capable of doing whether I express it or not?" Then you take that filter and you look at the movement traditions of yoga or pilates or powerlifting or weight-lifting or marital arts or dance. You can start to see the real patterns. Through induction you can see the similarities in the shoulder positions.

That what people have been doing ultimately through derivation of technique and mechanics is expressing the human physiology in the best way to get an outcome. To throw a spear, to run and the universality because the shoulder is the shoulder, the hip is the hip, maintaining a stiffened spine when you lift something heavy is effective for transferring energy and carrying your daughter up the stairs. Now we can start asking a better question about it's beyond fitnessing which is a verb we've started using, "Hey," let's stop, everyone's working really hard right now, everyone's cleaning up their diet right now." Now we can become a little bit more sophisticated and say, "Well, what is it you're doing? What are you missing here?" Then it has greater implications about, "What should my children be doing?"

"What skills do we need to convey? How much time does an average person have when they're trying to get fit, stay healthy, prepare food?" You know what I mean? I think what's interesting is we're starting to see the essence bubble to the surface. We are able to skim that off when we develop long-term sustainable practices for people and that is where we are today.

Tony: You mentioned how performance nutrition is heading towards whole foods

for a good reason. Whole foods are the things that we're designed to eat and that's the whole idea behind Paleo. Then we're also as you said looking towards what are those whole food equivalents of movement patterns? What are the movements that our body is designed to absorb or experience in order to grow and adapt in the right ways? One thing that you mentioned and I want to go back a couple of steps here because this is just something I'm curious about, when you were growing up and you were a multi-sport athlete basically when you were a kid doing mountain biking and skiing and all these different things. Did you have movement mentors at an early age that were focused on quality movement of explaining to you how you should connect with your body to understand how it's working?

My experience personally was not that that's why I'm asking because basically they just picked the kid that was naturally good at running and he got the position that involved running. If you couldn't run right off the bat you're put off into the backfield if it was soccer, the outfield if it was baseball. Wherever you could do the least amount of damage to the outcome of the game. In your experience what was that early cultivation, what did that look like?

Kelly:

You really bring up a good point and I think it has relevance to how we're thinking about kids and injury prevention and health today. It's a commonality that you hear across all professions is that, "Hey, specialization early is definitely a double sided sword and one that has proven not to bear the fruit." What we've told parents is, "Hey, make sure your kids are playing lots of sports" Theoretically that would create enough of a movement foundation where we would inoculate ourselves and I think my friends and I, our coach friends we talk about, "Well boy." We noticed that kids who had some gymnastics training, they pick up skills really fast and they have good body control and kids who were in an early aerobic sport, you can't cheat having aerobic base, you can't go back in time ten years and just ...

Those kids who were running or biking or had some kind of a cross country ski sport, those kids were really could work hard and had big lungs when they were sixteen, seventeen, eighteen, nineteen, twenty. I think what's interesting is that most of us ... I'm forty two ... Is that we did not have the smaller movement training. When I said to my mum, "Hey, why wasn't I in ballet and dance?" That's really code for I didn't ever have any formal movement skills. I remember playing soccer and it really was about can you get the ball in the goal and make the pass, not about how were you running when you did that? I remember having terrible sever's disease which is a really painful condition of the plantar fascia on the heel, it basically disrupted the growth plate.

What I did about it was I just sucked it up and went and I played for months the soccer with this stubbing heel pain. Later on in high school my knee blew up and it turned out it was a terrible runner. I would buffer these things and people said it was normal. I think because I came out, now I have the hindsight twenty-twenty. It's interesting because I'm running these

experiments on my daughters, how much formal movement training do we need? Not much and I do agree that if you had kids involved in something like MovNat or some formal movement education program where they were learning the skills in the context of nature. Like if you read Chris McDougall wonderful book, *Born to Run*, it's really the greatest sports book I ever read-

Tony: It definitely changed my life, [crosstalk 00:16:54]-

Kelly: Big time. I borrow a lot from Chris and he's a good friend and what I can tell you is that in those movement traditions of the indigenous people who were those amazing runners, that Indian population, they had games built and because running was so important to the culture, they had running games that taught them requisite skills to their kids. I think it's really interesting, I was talking with a friend about this phenomenon and he said, "Hey, I played this really politically incorrect game in high school or in middle school called butts up." Did you play this?

Tony: Never did.

Kelly: You basically throw a tennis ball against the wall and you had to catch it. If you dropped it someone got to peg you with a ball and if you missed three fielding errors then you had to bend over and touch your toes and everyone got to throw the tennis ball at your butt.

Tony: Man, glad we didn't have that game when I was a kid.

Kelly: What was interesting was that he said it was a terrible game, it penalized dropping the ball but it made everyone a really excellent fielder. Kids did not drop the ball because they had created a status or a game where they're penalized for making these errors, the ratio reward curve was bad. I think through that negative reinforcement he went and played professional ball afterwards. We're talking about what are those tricks and gimmicks that we've figured out? Because now I don't think we have to leave it to chance, we can say, "Hey look, your kids probably should be able to do a push-up and pull-ups are great." We almost got there with the presidential movement physical fitness test and I think what's interesting is that we pin back, we want kids to play lots of sports, they should have some formal movement training. That can be very simple and can be delivered by a parent or a teacher or a gym coach.

We're starting to see that paradigm shift happen where we can teach some of these fundamental movement skills and ask how rich is the movement environment? Because what we know, what we're trending is that it is a disaster. Kids are weaker than their parents were, they're running a mile an average of a minute and twenty seconds slower than their parents. What we're seeing is this in spite of the fact that we've become hyperspecialized from our society's fetishization of sports and professional sports and professionalization of youth sports, we should not be surprised by that. We are also seeing the influence of poor diet and poor environment impact itself

on kids.

Tony: Continuing with the idea of what should kids be doing and what are kids doing you mentioned that some sort of movement quality practice, something like gymnastics or MovNat, that would really be the gold standard, get your kid exposed to something where they're learning-

Kelly: Pack War, totally.

Tony: Via Pack War and all these types of things but tell me a little bit about the movement diet of your average elementary-middle schooler.

Kelly: I think what we're seeing is if you look at how we typically structure school and we're in this because of our work with the standing, moving desk revolution is the kindergartners are rambunctious and they play. I have a now going to the third grade daughter and she is a demon on the monkey bars, you cannot out monkey bar this kid. Literally parents come up to us and they're like, "I don't know what it is about your daughter and the monkey bars but she's special." I'm like, "No, she's just like a kid hanging up from a bar, do not confuse that with any other skill." I think what we see is that those kids sprint and they move a lot, they're always running, there's always sprinting.

It's that we were in Africa a year ago and you see all the little baby animals sprinting away, playing these little sprint chase games. Some of that I think is this intrinsic drive to move and what we know from guys like David Epstein in The Sports Gene is that there are these intrinsic genetic drivers to move. I think if we created a richness in the environment and let some of these things happen. You would see spontaneous play take shape of a lot of squatting and jumping and landing and pulling and climbing. It really looks rich and I'm not talking about fitnessing, I'm talking about just moving the body through these big ranges of motion in constant play.

Then it starts to shut down and kids get one recess then they're wearing high heel shoes and they're sitting all day long. What we really see is that then our counter to that is to try to get kids into sports. What we're missing is this thing called non-exercise activity. What we're doing as parents is trying to remedy the fact that our kids aren't moving enough by putting them into a very specific sport which doesn't remedy that. Yes, they got some "exercise". They are very simple things you do, we made a commitment last year for example not to drive to school ever. It's about a mile to school and my wife and I could walk to school and be back in the car driving away at about 8:15.

We had that luxury but we still putting in that extra mile of walking to school, over the course of the school years is significant amount of non-exercise activity because I realized that we just couldn't get enough activity. In fact our friends at Nike sent us a bunch of fuelbands and my daughters wore them for a while and when it rains their activity just dropped abysmally. I think what we have to be doing is seeing that because we're a car culture,

because technology is not going away in driving some of the decisions we're making, we're not going to be Pollyanna about saying, "Hey look, we're never going to have tables and sitting is dangerous." We have to be looking at how does the human being thrive? Thrives on sleep, great quality food and as much movement as you can program in in a day.

It was a great book and I forget the title or the author but it's called, Fight Night and Infinite Games. One of the things that has been useful as a tool for Juliet and I, my wife is that we turn some things into a game or we use game theory to think about solving a problem. We don't try to gamify our lives, that'd be annoying. One of the ways we gamify this for Juliet and I for example is that we start a brand new game everyday and it's called who can eat more vegetables? Literally if we don't do that then all of a sudden it's dinner time and we're like, "Holy crap, I had a handful of berries and some eggs for breakfast but I have not eaten a green thing all day. Why? Because I'm hauling ass at the gym. I didn't sit down and eat my perfectly prepared three pound kale salad."

We do try to do those things but we realized that in the morning if we had a vitamix full of a vegetable then we're already winning for the day. We should be thinking about our movement the same way. It could be even like taking a walk with your kids after dinner or playing some outdoor activities. We have a pool and our kids are in it nonstop. We see the environment with backgroundness and we just have to be putting in more non-exercise activity along with some really structured doses of maybe some formal movement training then let's turn over to the games and the sports.

Tony: It's almost like the idea behind putting out fresh fruits and vegetables where they're easily reachable, hiding snacks. If you want them you have to really go looking for them. Doing the same thing with movement, now you mentioned that you don't think that sitting is the ... I would guess that you're not a real ascriber to the whole sitting is the new smoking adage.

Kelly: Here's the key and I'm speaking at the Berkeley School of Public Health about this next week at the science of sitting symposium and the occupational medicine. Look sitting is part of who we are and what we do and the environment is geared against us. You're going to drive and commute, I think it's Harvard that defines sedentary lifestyle as sitting more than six hours a day. In stead of saying, "Chair good or chair bad, standing good." What you say is, "What is the chair metaphor for it?" It's a metaphor for sedentary behavior and of course I have my own feelings on a set of adaptation errors that happen around habitual sitting for it hurt our necks, stiff spine, compromise breathing, pelvic floor dysfunction, check.

What we're really saying when we say chairs is saying that, "Hey, you're dropping below what we've established as a base metabolic usage by your body. That's one and a half metabolic equivalence and when you sit down, you fall below that one and a half metabolic equivalence. When James Levine who is the man who coined that term sitting is the new smoking, his

work is really in trying to solve the rapid and unchecked obesity problem in America. When he realizes his recommendation even in New Zealand and Australia they're saying, "Hey look, for kids particularly in this developmental phase they need to sit less than two hours a day.

It turns out that kids are sitting twelve to fourteen hours a day, they're actually sitting for almost eighty five percent of their awake hours. That's not how the human animal is designed. When you keep your dog in a cage for eighty five percent of the day let me know how that goes for you. You're going to have a dog that freaks out and kills people. I think that's how we need to be thinking about the chair. Which means that we're empowering people not to see the chair as evil because right now I've been up and down all day and I'm sitting cross legged on the floor.

Sitting on the floor takes my hips to full range of motion, it's a great rest period, I can work in this shape. When I look at my world is divided into, "Is this an optional sitting moment? Or is this a required sitting moment?" What that does for me is it cleans up the junk movement or junk time in my life where I'm like, "Hey, if I can be standing I'll choose to stand and standing means moving, not standing still like a cashier but moving as in around. That means I can put my foot up on the stool, I can lean, I can use my fidget bar, I can create movement options-

Tony: It's a dynamic state.

Kelly: Even sitting I can apply technique to sitting and make sitting much more an active dish. What we're thinking is, "Hey, sitting is the posture child for sedentary behavior." if we're looking at you're solving an epidemic of obesity and diabetes then the number one behavior we could change effortlessly is the sitting behavior. For the first time on the history of United States we have more obese Americans than non-obese Americans. We've just come out that said the WHO is saying, "Hey sedentary lifestyle is the fourth biggest global killer annually." That there's some research that just came out that said, "Hey, in spite of the Mitchell Obama's Just Move Program we're still seeing we have unchecked childhood obesity. We may have slowed the rate but we're still going up. What we have to ask then are whether they're behaviors that we can make change.

Just like we see food deserts in cities where people don't have access to vegetables or fruits, we are aware of that and making that just the option. If you want kids not to eat cookies at lunch, you don't serve cookies at lunch, you serve apples and carrots. It's that simple, I know that if there's a cookie in the house at two in the morning and I wake up to check it or not I'm like, "Hey, where's that cookie?" It's just easier for me not to have cookies in the house. We want people to start thinking the same way about their environment because they're not looking at this non-exercise activity and it's impact on positional mechanics and positional competency.

It's easy to say, "Hey, it's okay to sit a whole bunch as long as you do the

elliptical machine and bicep curl and you don't actually ever use your body." You're probably right, until something may or may not go wrong. If you're using your body the way this modern training resumes are asking us through Barry's Bootcamp or some of these other SoulCycle CrossFit, StrongFirst. You have to have full available range of motion otherwise do not be surprised when your Achilles starts barking at you, when you develop plantar fasciitis, when you have non-specific little back pain, when you impinge your shoulder, when your jaws clench. These are movement related problems and if we pin back and look around we say well, "Hey, it turns out you're not moving and most of the time you're stuck in this arch shape, this demi-human shape. I think it's a lot easier for people to conceptualize that they can make massive change if they systematically think differently about how they can make the environment fit the physiology, instead of always defaulting to making the physiology conform to the environment.

Tony: What I'm getting is that it's not that sitting itself is so inherently bad as far as all movement patterns go, sitting is not the devil of movement pattern-

Kelly: It is. If you want to go fast and jump high it presents a whole bunch of problems. John Berardi is one of my favorite thinkers about nutrition, I think he's just so reasonable-

Tony: The Precision Nutrition guy?

Kelly: Yeah. People get all up into their macros and, "What are they doing? How dare you use that olive oil instead of coconut oil? Don't eat nuts." I'm like, "Did you eat six to eight fish balls of vegetables today? Are you counting bacon as a daily food source? Let's do first things first." Those are some of his maxims, he's like, "If you eat like a responsible human being, probably a serving of ice cream is not the limiting factor to your nutrition goals or being diabetic or not." It may not be the best to you every night but let's put first things first, the problem is if you're sitting in the context of this unhealthy movement diet, it really is the junk foods, the junk movement and that's what we have to be careful about.

Tony: You said that when you sit and I'd like for you to walk through how you sit, how do you sit better? If this is a junk pattern to begin with, how do you improve the quality of your sitting? For anyone who's out there listening to this right now, they're driving to work, they're sitting at their office, what would your advice be to improve the quality of that position?

Kelly: The first thing is understand that inherently that if you're sitting, you're compromised period. It doesn't matter how braced you are, great if you can move to the edge of the chair fantastic. Understand that the way your spine stabilization works is that when you sit down you knock out some of the key features of creating a stable spinal platform. You're no longer weight bearing through your hips, you no longer can wind up the endopelvic fascia, you can no longer tap into the short hip rotators which help the balance, the femurs on the spine. You end up defaulting to a second order of stability and your

glutes are basically turned off, you can't use your glutes to manage your pelvis, spine relationship.

Even from that alone you're basically moving yourself into a braced position which is equivalent of just saying, "You know what? Let's put a belt on your trunk." A weight-lifting belt, "We'll just wear that all the time and don't worry about your abs because we got this belt now." What we see is that we know disuse is always catabolic, we're going to become weaker, things are not working, it's Wolff's law use it or lose it. What I can say is: one, when you're sitting try to maintain ... If you were standing up tall and squeeze your butts and put your rib cage down and organize your head, that's the same spinal orientation I'd like you to sit in.

I'm not worried about you bending over, I don't need to be fearful of rounding my back, pick something up once in a while, I need to have this movement. Go to see a modern dancer and tell me that you're worried about their spine breaking, it's not going to happen. We're robust but these habitual patterns where we're static and not moving means we got poor perfusion because the musculature of our legs isn't moving, it's not pumping, we're not dumping the lymphatics out of our system. It just creates a whole bunch of mechanical and physiologic errors. Number one is, sit at the edge of the chair, try to bring everything to you when you're forced to sit, don't just totally slouch, don't collapse into the back of the chair.

Then two is understanding that sitting pattern you may have to spend a little extra soft tissue time working on it. Which means you may have to open up your hips a little bit more, you may have to mobilize your curves, you may have to hit your T spine a little bit and having a plan to address that if you plan on having full function as a human being is going to be part of the program. That's a really important distinction because it's not about scaring people with a pain, no pain mantra, it's about addressing that we're losing functional capacity when we sit and more importantly we're forgetting that the way that the brain operates around skill acquisition, practice doesn't make perfect, practice makes permanent and that those mortar pathways end up being my default pathways. If I'm always internal rotated at the shoulders and slouched guess what happens when I'm stressed and freaked out? I'm going to default to the thing I do the most often.

Tony: That's the practice pattern?

Kelly: Yeah. Why do we teach any skill and repetition? Go to some russian tennis camp and you're going to do ten thousand back swings without a racket, this is why we teach skills. What's interesting is that people become very skilled movers and then throw all of that skill out. If you do pilates or yoga, you're talking of perineum breathing, pulling up on your banda and your organized and your tall and long and rotating and playing then you just go and slouch what do you think that that ... Because I ate a salad negates the pizza I ate for the rest of three meals a day. That's the way we're thinking about our movement quality and it doesn't have to be perfect it just has to be within the

realm of reasonable.

Tony: Let's say somebody is hearing this and they decide as I've done to get rid of most of the chairs in my life and that's something that I did within the past year. Obviously I've got a physical job, I'm a trainer as well as a podcaster, I'm out on the exercise floor squatting down when I'm working with a client. I get a lot of incidental movement in my life but I found that I was having some pretty chronic back pain often times when I was doing my admin work. When I'm doing payroll and I'm going through all the little emails and everything else I accumulate throughout the day and led to me sitting for a couple of hours maybe out of stretch. Got the stand up desk, how big of a decision or how important is that in terms of giving somebody a new lease on movement, getting up out of the chair then transitioning to a stand up type workstation?

Kelly: Here's what I'll say is that when you decide to move more, everything up regulates, I don't know if you've seen the functional MRIs about brain function. My wife when she works at a standing desk the research is that she'll burn about another ninety five thousand calories a year just because she's not sitting. Maybe that's important to you, for me ninety five thousand calories represents a lot of grass fed ice cream, just going to say-

Tony: We're talking about the obesity epidemic, that's got to go towards it in some way.

Kelly: We know the research is clear about kids it actually can reverse obesity trends in middle school, elementary school populations, just reverses it. Kids add about two body mass index points per year for every year they're in school sitting. When they stand they drop up two, it's a delta of four, then it's a delta eight, it's a huge amount. The key with understanding is that I think you should have a stool so you can lean and you can use that stool and it's a cheap stool. We had some really Bed Bath & Beyond stools, IKEA stools that are German and you can lay your leg-

Tony: Is that a bar stool type things that you kick back on a little bit?

Kelly: That's right and that means that you can lean, take a break, that means you can put your foot out on a high squat and you can really use that thing as a tool. We say to people also, "It's not a standing station type of place to put your feet." You need to put a foot up in that Captain Morgan pose so that you can take some of the load out of your spine. The bar tenders figured this out a long time ago. If you want to keep people drinking on, give them a place to lean and give them a place to put their foot and they'll stick around forever.

The other I think crucial piece about this is that we are a culture of all or none, champions or losers and what I can tell you is if you're new to standing you're going to be cooked while you're burning more calories, you're working harder. You have intrinsic musculature that's very weak and turned

off and what we recommend is to train for this like you're training for a marathon. You should shoot for standing for a total of one hour total through the day. When you're like, "Hey, it's eight o'clock. Hey, I'm just going to try to during a certain activity I'm going to just try to aggregate and try to give a total hour." Just one hour then sit down the rest of the time, give that a week, give it two weeks, be cool. We're not going to turn this ship around in a week or a month and what you'll see is that when you aggregate the slow change then we do see adherence to the behavior. The research around to stand is that it doesn't ever take in quality of the sitting, quality of the standing, right?

Tony: Right.

Kelly: The movement richness and also what we find is that people get tired and they drop their standing desk down then that's the end of their little standing experience. The novelty is worn off because it's like, "Dude I got to work." They sit down and slouch and default to the practice behaviors. What we see is in our kids for example, they have no problems, over the last year our daughters have been at the first all standing moving school in the world. The bottom of the desk has something we call the fidget bar which allows us to basically swing back and forth so kids are in constant motion. The kids they have no problem with it and what we're seeing is the adults who get used to it also have no problem with it. If you've been sitting for the bulk of your life then you go to stand guess what's going to be short? anterior hips, the musculature of your trunk, your postural muscles, you're going to burn out, get a dose, get a response.

Tony: It reminds me of you mentioned Born to Run earlier on our conversation and after I read that obviously I went out and got some [inaudible 00:40:22] and ditched my conventional shoes and gave myself a nice case of plantar fasciitis. I think that that's what I'm hearing from this it's not about going from these extremes. You were talking about that before how people spend all this time sedentary hours and hours a day then they go and do CrossFit or they go and do the Weekend Warrior thing and wonder why they blew out their knee playing pick-up basketball. I like this idea of let's progress it, it's like, "Okay, let's assess where are we right now? All right, we're sitting six to eight hours.

Let's just work at getting that first hour of standing time in." Even when we do that, make it a dynamic position not going from one static, stationary position to another. Even though standing might be better, standing still is probably not necessarily optimal either. I remember seeing some stuff, looking at people back in the industrial revolution, they had a lot of trouble because they were standing in one spot for hours and hours a day.

Kelly: That's right and I'll tell you what, the problem is sometimes in the science we forget our movement traditions. If you stand in a yoga class into a position called *tadasana*, it's standing meditation. Standing well organized, turned on appropriate amount of abdominal stiffness, being able to breathe head neutral. Dude, manage ten minutes like that for me, let me know how that

goes for you, you're going to cook. That's how we want people to think, what's interesting is that there's not ever one mechanical system that drives the entire thing. We want people to be on their bony structures and they hang on the fascia then they move to muscular systems. It's one system fatigues that'll naturally fidget and your brain gives you these large cues about time to move. If you listen a little bit you're like, "Whoa." What ends up happening is that we have our culture of, "I take Ibuprofen because my neck hurts.

"My hand is getting stiff." Or that little tingling, "That always happens." Those are the precontact cues that your body is going to fight you. Your body is behaving like, "Hey, something is not cool here bro." That's just called fidgeting and that's why it's important that if you just listen the internal alarm will go off and that's one of the ways. Since I've been talking to you I got up off the ground, I walked around a little bit, now I'm in a full squat and I could be doing the same thing with my email, with my ... Just changing the position and one of the things we say is, "Hey, your next position sometimes is your best position and that is that there's probably less of an ideal position.

One of the things that gets into people's crawls about our work is that we always are talking about do these positions scale up? Because I'm not interested in dead-end positions, yes, it's okay to slouch, no your head won't fall off. Karma, "If you plan on swimming later today, that slouch is going to suck, it's really going to ruin your crawl stroke and your forward head on neck is really going to make your running bad. Your elbows are going to flare out and you're going to get slow. What we try to do is say, "Hey, let's encourage [posture 00:43:29], remember posture is just a pretty word in Latin for position. Let's cultivate positions of integrity and positions that transfer. What's beautiful about having a standing station that's optimized for your height because it's designed for you not for that five foot one or six foot seven guy, it's for you.

Then a lot of the positional integrity thinking goes out the door, I don't have to do it. When I walk up to my desk, the integrity of my spine is already maintained and what we see is that that's a beautiful way to automatically inoculate kids against technology. I don't have to teach you about where to put your mouse and how to orientate your ... Because you come in and when you're on the iPad you are automatically in a good shape. That's what we were trying to do, we try to build in the same level of thinking that we're doing we're under food with our movement. If you want to eat carrots and almonds, you know what's right on your table, carrots and almonds. If you want to eat a bag of popcorn, put a bag of popcorn on the table. If you want to protect yourself you'll come on in and you'll automatically adapt to that position.

What we want people to see is that what we see is a culture of, "I take this turmeric, everything's awesome." You know what I mean? That's not, we're trying to create an ecosystem, part of a physical practice and we put nutrition in your physical practice. Sleep is part of your physical practice, all of those

aspects, being able to down regulate, part of your physical practice. Suddenly, instead of adding one more thing to someone's plate for lack of a better Paleoism, what we're really doing is we're creating systems that are sustainable no matter what.

Tony: That's awesome man, I've been thinking about how we view our bodies and what you're saying about, "Oh, I took my turmeric, I'm good." There's a panacea out there, there is this appeal or there is this one exercise, it's like those internet click bait ads, this one thing that you must do otherwise you're going to die in a year. It's playing on our desire for a quick fix but it's not realistic, it's not really going to give us results. We got to look at the big picture and change the ecology in the environment that our body exists in in order to get some sort of transformation.

Kelly: This is low tech. People they'll email us and they're like, "Hey, I need a doctor's note so that I can get a stand station." I'm like, "No, your employer needs three doctor's notes before they want to spend five thousand dollars on your ridiculous treadmill desk." What we say instead is I'm like, "Do you ask for a doctor's note to go to the bathroom?" I'm like, "An Amazon box is the gateway, you need a phone book for your foot and an Amazon box and you have a standing station, it is your God given right to stand up. If you have that cubical in the middle of the office, move your stinking cubical to the edge so you're not the freak standing up in the middle." we get it, create a little cabal of people who stand up and work on the edges.

The people actually I hear from the most are students in physical therapy and I also hear students like med students are like, "They're crushing me, they're trying to kill me, I feel terrible." I'm like, "Well why don't you stand in the back corner?" they're like, "Oh, that's a good idea." I'm really proud ... Let me give some props, we have a new CEO of the American Physical Therapy Association, Justin Moore. He is just such a baller and even the APTA national offices are changing how they think about movement, hygiene, in their national offices. Because sometimes we inherit these systems that we don't think about much even though the physical therapists are the advocates for movement and health and well-being. Here we are at the national office and people are sitting and not standing. We are seeing this tide change happen and it has to just happen and it's never going to happen top-down, we believe this to be a revolution of the people.

Tony: That's great man, unfortunately we're coming to the end of our call today or our conversation today. What would you say ... Just putting it out there, you're most famous I guess for the Mobility WOD and the work that you've done giving people some tools for self-care. Treating this as a universal human right to have a body that works, what would you say is just on the most basic level the most important thing that people can be doing to take care of their body?

Kelly: We get this question sometimes, people are like, "Distill it down Starrett." I'm like, "Look, it's probably you need to walk more, you really have to take a

look at your sleep quality." I'll take a bump in sleep quality over any nutritional supplement you can take and that means things like get your iPhone out of the bedroom, no TV in the bedroom, no iPhone in the bedroom. It just needs to be pitch black and cold in there. The one thing is also that we found that makes a massive difference for people is add a pinch of sea salt to your water. Absorb the water you're drinking. We're just drinking all of these bottled better, it's getting slightly better but we're drinking so much water, you know what happens when you drink pure water? You pee it out.

It's really easy to add a pinch of sea salt and actually absorb the water you're buying. Those three things if you end up walking more, sleeping better, absorbing ... You'll see that the body is always moving towards upregulation and homeostasis, I think it really does want to thrive, it wants to heal, it has a built in healing process. When you remove the roadblocks that it's not a game of inches but it's a game of, "Let me remove this dam and this dam." The water flows and the body is built to be a hundred and ten. We're probably going to outlive our gonads. The mechanisms on the mechanics and the physiology, the body is probably going to last forever.

Tony: For all the people out there listening, you recommend heading over to your website, tell us a little bit about Mobility WOD the website, what people can expect when they go there, why should they check it out?

Kelly: We started Mobility WOD as a need and service to the community on our Youtube channel at Mobility WOD, WOD as in workout of the day. We have about six hundred free videos over there, it gives you a glimpse of what it is we do then we have free content on the site. What we realized is that people were really ready for a graduate level sophistication and on the website we have about two thousand videos about mechanics and position and optimizing performance and running and interviews. We really are trying to get people into thinking about how to integrate these practices into their daily lives.

One of the things that we've done for example for the last three years we have done a daily ten to fifteen minute mobility program. If you just dropped in you could start with us today and we'll program a ten to fifteen minute lesson everyday of you working on your feet or working on your quads or improving your hip flexion. That really helps demystify this for people because it is overwhelming when you see Mobility WOD it's like you just discovered a Pacific Ocean. You're like, "This place is big and crazy and people have been here for a while and I'm just a beginner." We really try to simplify it and create the video content that goes along with our books like Becoming a Supple Leopard. If you grabbed our newest book that you talked about Desk Bound, we've really tried to strip out the theory and given really simple interventions. Desk Bound is a simple Betty Crocker cookbook then Supple Leopard is like Jack [inaudible 00:51:14]. You know what I mean?

Tony: Don't forget Ready to Run man, you're talking about how you were not really

the best natural runner but you wrote a book on running and I've achieved quite a few feats when it comes to some distance efforts.

Kelly: Turns out I am the biggest [endurancer 00:51:29] that you're ever going to meet.

Tony: Just had to learn how to do it I guess.

Kelly: That's right.

Tony: Hey K Starr, thank you so much for coming on the show, it's been a pleasure learning about movement from you and I'm going to continue checking out your website there's like you said a whole ocean of M WOD goodness out there. Thanks again man.

Kelly: Thanks so much.

Tony: That was doctor Kelly Starrett of Mobility WOD. You can check out more of K Starr's work by going to his Mobility WOD Youtube channel, visiting his website in mobilitywod.com or by checking out his brand new book *Desk Bound* which is available now on amazon.com. Our next week show we're going to keep things moving by bringing scientist, mum and movement expert Katy Bowman back for her second PMR appearance. Here's a preview.

Katy: There's not a lot of highlight I don't think of, what movement looks like outside of an exercise program. You can follow anyone on Instagram and see amazing workouts but I don't think that you can see a life rich in movement. It's like you see what people do for that hour. I use that page a day in a life and my Instagram account to show how ... I call it stack your life, it's permaculture principles of how I've put the natural movement back into my life, how I choose to live on a day to day basis.

Tony: To find out more about stacking your life with movement you'll have to tune into the next full episode of Paleo Magazine Radio but until then you can check out our archive of PMR episodes on paleomagonline.com. If you're heading to the Ancestral Health Symposium in Boulder, Colorado next month you might want to check out my talk, get up, stand up. A brief history of sedentarism and how movement is good medicine. As you can likely infer from the title the subject matter is right in line with today's podcast but with a few tweaks that you won't want to miss. I'll reveal the origins of the phrase, the chairman of the board dive into the surprising effects of sitting on the human body and uncover what science has to say about alternative options like standing workstations. I have a feeling that this year's AHS is going to be amazing and I hope to see you there.

Once again I'd like to thank the sponsor of today's show Ancient Nutrition, I've been mixing their unflavored bone broth protein in all sorts of things lately including my almond butter. If you have a weird way that you like to

incorporate bone broth protein be sure to share with me by sending pics to my instagram account at Tony Fed Fitness where I'll share them with the world. Paleo Magazine Radio is brought to you by the Paleo Media Group. Our show music features the song light it up by Morgan Heritage and Jo Mersa Marley. Paleo Magazine Radio is produced by me and on behalf of everyone at Paleo Magazine thank you for listening.