# Paleo Solution - 250

# [0:00:00]

- Robb: Howdy, folks. Robb Wolf here, another edition to The Paleo Solution Podcast. I am incredibly excited to talk with today's guest Dr. Phil Maffetone. Doc, how are you doing?
- Phil: I'm great Robb. And it's really wonderful to talk to you and finally meet you if only electronically. But I'm excited too.
- Robb: We were talking briefly before we started rolling here. I have followed your work for a long, long time. Read The High Performance Heart, The Maffetone Method, In Fitness and in Health. I've followed all of your work just for a long time. And I tend to be a little bit on the power side of the athletic spectrum, I know that you've had a lot of notoriety for training endurance athletes although we were also just talking that folks love the pigeon hole folks and so now your only the endurance for guy. But clearly you've written a lot of material on a wide ranging number of topics. Could you give folks just a little bit of your background?
- Phil: It depends on how far back you want to go.
- Robb: Electrons are cheap. So you go as far back as you want.
- Phil: We experience life and hopefully use those experiences to become a better human being and that's what I've done. You know, I grew up eating junk food and unfortunately it had a bad effect on me and I didn't realize how significant diet was until I was about 18. And I was standing on line in the college cafeteria and I suddenly looked down on my food and I said I can't eat this. This isn't real.

And it was a real defining moment for me from my nutrition standpoint. Up until that point I had run track, I was a track and field athlete in high school and college. I just didn't like the whole trend from a coaching standpoint and the whole physical and mental aspect of the sport. And I kind of became a loner in terms of coaching myself and I had a lot more success that way. Eventually, I decided I want to be a doctor and help people. And that's what I did and got into private practice in 1977 and was always interested in exercise Physiology and that's the type of patient I attracted. And back then, the running boom was beginning to really explode and most of the people out there were runners, couple of cyclists and swimmers here and there and the world of triathlon had just been born out west and I was in the New York. It took a while to get there but that was exciting too.

But I've worked in literally every sport from motor sports to inclined racing. And it's been a really wonderful ride along the way and of course as you say I'm more well-known for the endurance sports for whatever reason. But I continued to compete on my own until the early 80's when it was just too difficult to travel with athletes, get them ready for the race and then at the last minute me jump into the race. And the fun came out it and so I stopped competing. I haven't competed since then but I still work out. I do many different things and enjoying life to the fullest.

Robb: Very cool. Doc, you were really in my estimation, a few folks like you Dr. Fred Hatfield were just incredible formative for me both in my athletic pursuits but also how I tackle things as a strength and conditioning coach. And I think both of you guys were just decades ahead of where everybody else is with their training and kind of their epistemology that they bring to their coaching.

### [0:04:58]

How did you arrive at some things like really looking at heart rate training and trying to produce a more fat fueled athlete? How did you arrive at that stuff so early? I mean particularly maybe we'll look at the heart rate training first and how you arrived with that and what the benefits are of looking at some of the methodology that you've used. And then also trying to build a more fat fueled athlete. That was really avant-garde stuff when you considered the 70's and 80's and the fat phobia that was occurring then.

Phil: Oh sure fats. And fats is still a four letter word. I remember I think it was 84, 85 maybe that I wrote a manuscript and was able to get it to Norton and they looked at it and they loved it and it was called the Big Fat lie. And it talked about the good side of fats, of natural fats and how margarine and these trans fats that were being popular are actually harmful because they knew that in the 50's. This was nothing new.

And they said we love this manuscript and we're going to run it by our medical committee just to make sure. Well, that didn't go well. I still have the letters that they sent to the higher ups and the publishing company. And they were like is this guy crazy? We all know that margarine was developed for heart patients.

Fats are good, what's he talking about? Everybody knows fats are – it was just a real pathetic response. And things haven't changed too much but there are some great books out there like your books. People aren't getting it. It's still a hard sell. The heart monitor relationship, there were no heart monitors back when I began. And I used manual pulse taking and realized that that has a very high error rate. I used some of the new pulse, the finger pulse meters and I realized that as your heart rate got up those became inaccurate.

And I found a heart monitor that was made for hospitalized cardiac patients who were going to be doing rehab. And it was like a crossing guard outfit. You kind of put this big strap around your chest and then one went over your shoulder and there was a box that slipped into this little netting in the front. And you have to look down your shirt to see the heart rate.

So I developed a reputation when I would go to the track which I did every week with a group of athletes that I was working with. And I was the guy who was connected with those people who kept looking down their shirts. And the polar monitor was the first wireless to come out and that was not until I think 1983. And that was great because then athletes were able to have their own heart rate monitor.

But I was looking for a way for individuals to monitor their workouts because they would go out and train or I would go to the track and I would look at them. And I used a lot of different types of evaluations. In the office, I could do physical exams and see the results of some of the problems associated with overtraining.

But on the track, I could look at their gaits and humans have been looking at gait. And you know humans have been looking at gaits for millions of years. Animals have been looking at our gaits, we've been looking at animal gaits and humans have been looking at other humans to observe their gait and get a good sense of what's going on in the body. And what I found was that at some point and intensity, the gait would become more erratic. And everything clicks. I said well we need to monitor the pulse better.

And when I eventually found that hospital heart monitor, it really helped and I had one and then I bought two and I have them in my office and I would put them on the runners when we go to the track and evaluate in that way. And eventually came up with a formula that they could use to train themselves and then the wireless heart monitors came out and then that was a great biofeedback tool for people in all sports.

[0:09:55]

I had weightlifters who were using heart monitors for their warm ups and cool downs and their off season periods where they would build aerobic muscle fiber function which is well endowed with blood vessels and those blood vessels bring in nutrients to the neighboring anaerobic muscle fibers which were not very well endowed were actually were void of blood vessels. So I had a lot of use for this including weight control and just everything. And it was an interesting time.

Robb: Doc, you know it's interesting because I think you can graph on some of kind of the puritanical work ethic if I just work harder then that's the way I'm going to succeed. You know take some of the modern fitness trends like CrossFit, what not, where they consider heart rate nearly a correlate of intensity not the defining feature of intensity.

> So there's been this – I think the pendulum maybe five or six years ago has swung very, very heavily towards high intensity intervals almost with the exclusion of any type of aerobic base building. Can you explain to folks why it's important? I mean you kind of alluded to it a little bit even for weightlifters why building this aerobic bases is important. Why is important for the heart? Why is it important for the vasculature? Why is it important for the muscles?

Phil: Yeah. I think one problem in terms of how this all began, how this trend started goes back to maybe the 60's even before Dr. Cooper wrote his famous aerobics book. What was going on was there were not a lot of people out there jogging and running and the marathon was just kind of an Olympic event and people didn't think of doing it themselves. But that started changing in the 60's and into the 70's and there were a lot of people all of a sudden becoming endurance athletes and there were not a lot of coaches around.

And what happened was many of the coaches from track and field came into endurance sports and they brought with them their work ethic which was intervals and faster is better if you want to race fast, you got to train fast and it's a completely different sport, endurance when you compare it to track and field. Endurance sports requires a high degree of aerobic function. And track and field requires a high degree of anaerobic functions. So they're night and day in many ways.

I think all you have to do is look at the physiology and look at the body and look at the kinds of muscle reposes versus other animals. If you look at the chicken, they have separate aerobic and anaerobic muscle fibers and they used their aerobic fibers which are in their leg muscles, their thigh muscles, that's the dark meat and they used them to walk around all day and they can do that and not get fatigued.

But when they have to flap their wings and if they have to try and fly, those are associated exclusively with their anaerobic muscles. And that activity can't go on for more than literally a few seconds. You know I have chickens here and if they fly, they'll take off and fly literally for a few seconds and then they exhaust their anaerobic muscles and that's the end.

In humans, all our muscles except for the jaw muscles are a mixture of aerobic and anaerobic fibers. And the aerobic fibers are very important for everything. Not just for running a marathon or a 10k but for everything. Certainly in a marathon, we use a lot more of the aerobic fibers because our aerobic energy in a marathon, 99% of it comes from the aerobic system. And when we talk about these things it can get confusing and people often say this is all very confusing.

It is confusing because researchers have made it confusing. They can't agree on definitions, they can't agree on even simple definitions like what is the term aerobic mean and what is the term anaerobic mean. You ask the average person and they'll say well aerobic is breathing and anaerobic is not breathing, it's not oxygen.

### [0:15:03]

I said well good, next time you go out into a race you don't have to breathe. Just hold your breath and see how far you go. So the confusion is prevalent and a lot of it is on the scientific end. But the aerobic system of the body is what makes us fundamentally great human beings. We're naturally athletic and whether we are a strength oriented person because that's what we enjoy doing or an ultra marathon who strives to run six day races or a thousand miles racist, we need a good amount of aerobic function in order to not only perform better but be healthy. The aerobic component of us plays a major role in being healthy.

- Robb: Doc, how does your approach to fueling then kind of, it seems like it overlaps well with your approach with regards to building an aerobic base and what not. So how does the fueling then overlay when we look at these mix fiber type and then kind of look at what type of athletic events somebody is doing. How does the fueling thing kind of extrapolate from that?
- Phil: Well, when we look at the aerobic system we quickly realize that fat becomes the fuel for that system. And if we're going to do anything long term, long term meaning more than a half a mile in race performance for example. Then we're going to rely on a significant amount of fat for energy. But it's not do we burn fat or do we burn sugar or do I want to be a fat burner or do I want to be a sugar burner? We have both.

There's a whole spectrum of energy. And if we're on the one side of the spectrum where we're not using a lot of fat, then we're going to be more fatigued, we're going to accumulate body fat, we're not going to have good endurance. And as we move along the spectrum and start burning more fat, then we shed that extra body fat. We become better at being a natural endurance animal. We developed – we begin producing more ketones.

And if we feel better further down the spectrum, further along the spectrum where we want to burn more fat, well we start making more ketones and we can measure that in the urine at some point. But it's a spectrum, it's like going from black to white. There's always grey areas in between and we have to decide how much – if we focus on fat, it really makes it easier. We have to decide how much fat we want to burn for

energy and we're not going to be able to attach a number to it but we should be able to go by feel.

All animals on Earth know how to eat except for humans. And we should know, you know if I look at my life and charted it out so to speak in terms of we can pick anything but if we pick carbohydrate intake, once I realized that the food on my tray when I was 18 years of age was not real, I began eating real food and that included real carbohydrates. But if I plot my food intake, my carbohydrate intake from that point till today, it's followed a downward trend. And it hasn't done that because I've tried to rationalize maybe I should be eating this way or that way, it's because I felt I need to eat less carbohydrates.

So I've reduced the carbohydrate gradually over the years and that enabled me to keep a high amount of fat burning going and that's what people really need to do. They need to be aware of what their body – you know we have these brains that are incredible. And our brain has told everything. And sometimes that is interfered with by TV commercials and articles in running magazines that tell us we should be eating a lot of carbohydrates. Well they are only saying that because they're advertisers, are carbohydrate advertisers. And so we get all these misinformation. Fat burning is really what being human is all about.

# [0:20:00]

Robb: Doc, it's funny because it's just such a contentious topic in the Paleo sphere I guess right now if we're going to call it that. For myself I had always had all kinds of health problems, GI problems. I was kind of doughy as a teenager. I lifted a lot of weights, was reasonably strong but just wasn't as lean as what I would have like to be. And then eventually got into this kind of cyclic low carb way of eating and felt really, really good.

One of the challenges that I've faced with in this story is that I've tend to gravitated towards these very glycolitic or glycogen demanding sports doing MMA and Brazilian Jiu jitsu, grappling type stuff. And I found that if – I was just kind of lifting weights or I was just doing more kind of aerobic activity, I could do pretty well with more fat fueled approach, even a ketotic approach.

But I found it when I started really mocking around with a lot of glycolitic activity. I just kind of needed more carbs to fuel that and I've played with that. I now mainly do some post workout carbs after I've done a hard Brazilian jiu jitsu session. And then my meals are some protein, low glycemic, low carbs mainly coming from like cashews and maybe a little bit of squash and what not. But I'll do do pretty good whack of carbs post workout and then my other very low titration of carbs, little higher fat and then moderate protein. What do you think about that?

It seems like if somebody is on one end of the spectrum either in that strength athlete deal or the legit long endurance athlete story, it seems like it can more easily be fat fueled. But if you stick somebody in that middle like boxer or wrestler, MMA athlete, it seems like it's hard to not largely carbohydrate fuel that person. What are your thoughts on that?

Phil: Well I think first of all you have found what works for you and you've done it by eating natural foods not by eating pasta everyday because it's not about that. And I think the strength athletes are way further down on that spectrum that energy spectrum than most people realized. They're not all the way to the left where really a carbohydrate based animal where we have all kinds of problems.

The strength athlete is further down where they are using some fats but they're also requiring more carbohydrate and that's not a problem. I think we can explain this in many different ways but I think focusing on insulin might be a good way to do it. In your case for example, you're not producing a lot of insulin because you don't eat meals that trigger a significant insulin response.

And when you do eat some carbs, you're doing it post workout for example where you're still not going to produce insulin if you consume some carbohydrates, some natural carbohydrates or even a glucose solution within that window right after your workout. And I like to do it within about 15 minutes of the workout.

And of course during the workout, we don't produce insulin. So someone doing a weight workout for example or a boxer in a session who needs to keep his energy up and it's not just his carbohydrate energy, it's his fat burning energy too. Because we assess fat burning by having enough carbohydrate. So consuming a drink like a marathon or in the middle of a marathon may need to consume some glucose. That's okay because we're not producing insulin. We have a huge number of non-insulin dependent receptors in our muscles. And we have this image, we've all learned this in basic physiology that the muscle has an insulin dependent receptor. And insulin comes along carrying glucose and it hooks into this receptor and it's able to get glucose into the muscle.

Well, what they don't tell us is that there is a lot of non-insulin dependent receptors in muscles that we can use just fine and the best example of that is what I just mentioned. The fact that we consume glucose during a workout or immediately after workout and we still get the glucose into the muscle without requiring insulin. And I've had plenty of athletes who could compete at a very high level winning races. Sometimes going three, four, five hours without consuming any nutrient during the event. That would be the ideal fat burning situation for an endurance athlete.

[0:25:28]

For you, for someone who's doing more strength oriented work, the amount of carbohydrate you consume has to be adjusted to your individual needs. For many years, when I would do strength work whether it was natural work outside lifting boulders which I love to do or doing weights which I do when I don't have enough boulders to do, for a long time I noticed that I needed to consume more carbohydrates.

In that situation I would usually rely on fruit or small amounts of honey. And the last few years, I've realized and I'm not doing easier work as necessarily. I'm realizing that I'm not needing to add more carbohydrate back. I noticed that the other day I said boy this is interesting. I'm not needing to add carbohydrate like I normally would do at this time of year in particular.

So it really depends on the individual and finding out your individual needs is best done by you. And people when they do their workouts they're trying to do everything but pay attention to their body. They got an iPod in their ear and they're listening to music or they're blasting you know they're listening to the music that's blasting in the gym. They're

talking to other – you need to not listen to music, you need to listen to your body.

- Robb: That just sounds like crazy talk that you would have to customize these stuff based off our individual needs. You need to do some self-monitoring to be able to figure that out.
- Phil: It's insanity. How could you say such a thing? We should all follow the same diet and the same work.
- Robb: You know it's funny, probably 80% of my time I spend like I'm always in this back and forth story of trying to throw out like a Pareto's 80/20 approach that will help a lot of people. But then the reality is that a lot of these stuff will apply to most folks. Eat whole unprocessed foods, probably avoid some gluten, sleep longer and stuff like that. But then there's this real need for customization and figuring out who are you and what do you want to do and then we start tweaking and fiddling the formula to fit that.

It's a difficult deal to both send out a general message so that the masses are kind of moving forward like I mentioned to you that I did a gig for the Reno Police Department yesterday. And so how do I get these overweight, insulin resistant cops moving in a more favorable direction. But then within that group of cops there's always, out of a group of a 100 of them there's 5 or 10 people that are super fit, really watch their food and they're kind of like what I want to do x,y,z.

And so I have a completely different message for those folks than I do for the insulin resistant people that are potentially going to have a heart attack or die young. It's a juggling act for me. How do you deal with that between the general message versus the auguring and get the specific message out?

Phil: Well I think when I was in practice, I had to deal with that same question you know how do I do this? And it came down to when working one-onone with somebody that okay here are some general guidelines and these are guidelines that everybody should follow because we're all humans and we have some basic needs that apply to virtually all of us.

And then there are these individual things and I'm going to explain these individual things to you because I've evaluated you and I come up with

things and you've inadvertently told me along with the things that are going to help you. And by the way, what I want to really do is help you help yourself because you need to understand how to change your diet because your human body is changing all the time from today to next month or next year, there may be changes.

## [0:30:00]

The seasons change, our physical activity, our mental activity changes. We go through different phases of our life and our needs will change slightly not dramatically. But there are plenty of very significant I don't want to call them rules but there are things that humans should never do. One of them is to eat junk food. And why can't we get that I mean you and I have been trying to get this message across for a long time. And why it's so difficult to and I don't know other than to say that: a. people are addicted to sugar and they can't get off it and two, they don't want to make a change.

So the first thing it took me a few years to figure this out. Patients would come in and I would work really hard to convince them that they need to be healthy and I finally realized that I'm going to ask them that question in the very beginning. And so I started, I'd walk into a room and I would say are you willing to do what you need to do to get healthy? And someone actually said no.

And for the first time in several years I started dismissing patients. I said you and I are not a good match. I can't work with you. I'll give you some of the names of doctors I refer to and you can go see one of those doctors. So the first question people need to ask themselves is am I willing to make the changes that I need to make with my diet and everything else in life, in order to not have all these gut problems, all these you know my memory is fading, my endurance is fading. I wake up in the middle of the night, I don't have as much energy, I don't have my sexual performance is diminishing. I don't want to go there. How can I change it?

There are some basic really fundamental things that humans should not do and eating junk food it is one of them and it's probably the most difficult thing for most people. Robb: Yeah. I've been working on a blog post a little bit around that line where looking at hyper palatable and just very novel foods, something that stimulates these dopaminergic centers of the brain. It's like hookers and cocaine. It's like would you pass up hookers and cocaine? Probably not.

To some degree, hopefully if folks can wrap their head around this idea that this is a signal that it's so far above what we are kind of evolutionarily evolve to experience that it's actually it makes damn good sense that you don't eat one Pringle but you eat the whole can. And if you could wrap your head around the fact that it's not necessarily sloth, not necessarily gluttony that there's some good wiring that goes into that.

But now we need to make a decision are we going to do something about that or not? It's like you can quit beating up your inner child for it because this is actually some great engineering that would make you eat that whole quart of ice cream or whatever. But now that we recognize that, okay do we want to continue doing that yes or no. And then it's a hell of a process to get people moving away from that because again I think we're fighting some evolutionarily conserved machinery where we would eat everything that we could get our paws on at a given moment because the next day might be a little on the skinny side.

Phil: Sure and I've seen it in nature. When you have a beehive to help pollinate your food. But the bears attack it every fall or try to. I could see humans doing that. They're wandering through the woods and they see a beehive and it's late in the year and the hive is full of honey. Well man, I remember tasting that honey one time and I want to get it no matter how much I'm stung and when I get there, I'm going to eat it all.

> Sure in the bears case, he or she is ready to hibernate and the more fat he can store, the better his hibernation's going to be. Humans have that physiological relationship too. But there is still the issue of do I want to do what is necessary to feel better. And in attempting to deal with this issue beginning in the late 70's, by the early 80's I have this thing called the two week test.

[0:34:52]

And my goal was to let somebody feel what's it like to have a low insulin level. To not have this high insulin peaks and this low blood sugar

reactions and impair fat burning and on and on. I said two weeks should be enough to begin the process so most people can notice a change and so let's call it a two week test. And for a period of two weeks they would not eat any junk food or any moderate glycemic index foods like beans.

Robb: Sweet potatoes and all that stuff.

Phil: And it was interesting because at the end of two weeks, many people said you know we're talking about a 40 year old or a 50 year old or even a 30 year old, they'd say this is the best I've ever felt in my life. And I'd say well okay, you're on the way. And now you need to put back some of those natural carbohydrates. Add a piece of fruit to your breakfast or whatever and see if you start feeling not quite as wonderful as you do right now.

And what I found was happening was that some people got it and they were able to move on and progress and they did very well. But many, many people could not do it. They would do the two week test, they'd feel incredibly wonderful, new people, miracle this is a miracle, you're a miracle doctor. No I'm not a miracle doctor, you have miracle body and that's what you're feeling.

And I'd see them a month or two later and they'll say yeah I did that for a while but then my kids came home with some candy and I couldn't say no and I went to a party. And so then I did the two week test again. And then they started calling it the two week diet. I said no, no. It's not a diet, it's a test.

But it all comes down to the bottom line, do you want to do what is necessary to make you have a high quality of life? We're not going to change our lifespan significantly, the question is do you want to live a full life until the moment you die? And it's as simple as that.

Robb: It's interesting. I just share such parallel philosophy as you do. Having have very parallel experiences too you know clients that would come into the gym and would profess a possibly their life had been saved by doing this stuff. And then six months maybe a year later, you haven't seen the person in the gym for a while, you ran across him at some social event in town and they've gained a bunch of weight back and they're clearly chagrin about the situation and I've just been I'll prepared at how to help those folks further because I've historically been busy enough that I've had in cue a number of folks that really, really wanted some help. We've had some pretty good success in the autoimmune scene.

And so these people are potentially going to die and so if I can help them then that literally is maybe helping to save someone's life. So I've been very, very reticent to burn a lot of time on folks that didn't want to help themselves. I have a lot of empathy and sympathy for them because I think I understand on a pretty good level why these hyper palatable foods and this kind of wacky lifestyle that we have, staying up late, not sleeping enough, reticent to exercise at times.

I understand all that but once that person is kind of have their eyes opened and they understand it too but make a decision to do something different then it's kind of like well, no harm no foul but I've got a lot of work to do and these folks are actually going to do what I ask them to do so I'm going to do that.

Phil: And that's the key is that is that I don't have time to play games with you because I've got a waiting list of patients who want help. And so goodbye. It's a tough call and when you're out there and you ran into that person you haven't seen for a year and they've gained a bunch of weight and they're hobbling along, what do you do? What do you say? It's a very delicate situation and invariably we start having a name attached to us that is a really bad name.

And people look at us and they think we're judgmental. And that makes things worse. I'm not judgmental when I'm saying just stop eating junk food. I know what it's like, I've gone through it. I know what sugar addiction is and how painful it is and I know what eating a cookie and not being able to stop until the whole bag is gone. It's that whole addiction thing.

# [0:40:09]

And by the way, what I found out with addiction is that there's a hole, within that whole addictive world is a whole hierarchy of more primary addictions and more secondary addictions. And I've worked with a lot of people who have tried to get off and successfully have gotten off everything from alcohol to heroine to cigarettes. And what I found was that the sugar addiction is a primary problem and if you can get them off sugar first, everything else goes a lot easier.

And of course in our society if you go to an AA meeting what do you see? They are eating a lot of sugar and drinking a lot of coffee and smoking a lot of cigarettes. That's treating symptoms and that's really the foundation of our whole health care system. But I know what it's like and I've been through it and I'm not being judgmental in any way and it's a tough call when you're in that situation.

Robb: Yeah. You have to have a lot of love for the folks but you've got to kind of triage and decide are you going to keep throwing energy into what is unlikely to be a favorable outcome? Or the next person in line maybe ready to go and save their life and make your life worth...

Phil: Exactly.

- Robb: Doc, did we miss anything? I wanted to ask you a little bit about the barefoot running and your gait analysis and what not. Again, you were just really at the bleeding edge of that whole concept. Like before the barefoot running, minimalist running became a popular topic, you were encouraging your athletes to train at least part of the time barefoot for their events. How did that get on your radar?
- Phil: I think when I was studying Exercise Physiology in the mid 70's, still as a student, I read a journal, article on EMG where they were measuring the electrical activity of muscles. And they show that when the subjects had shoes on, the muscle function was not as good as when they didn't have shoes on. And this was in the 50's.

And I never forgot that and even still as a student when I would start looking at athletes, I wanted to see the pure athlete. I didn't want to observe them on a treadmill, I wanted to observe them outside. And it was great observing them on the road or on a trail but I wanted to have a flat smooth surface so that's when I started going to track to look at athletes.

And when I got into practice, I just wanted to see the pure human body and I didn't have them take of their clothes but obviously the shoes had a significant influence on their posture and their gait. And so taking off their shoes was a way to observe them as pure as senses as we can observe them. And so the difference from – and back in the late 70's, the shoes were they were just flat. It wasn't a lot to them. When I ran the New York City marathon in 1980, I wore a training shoe because it was very, very flat. But that was sort of the end of that era of shoe making and manufacturers started making thicker and thicker. But what I noticed by taking off the shoes of a runner and observing them, but their gaits where night and day. Their gaits were so pure and so balance when they run without shoes.

So then what we have to do was assume that they want to keep wearing the shoe which most did. We had to find a way to balance their body as best we could then put on a shoe that interfered the least amount and it was a tedious process. But it was a very effective way of getting what we needed. But people say well, I don't understand how I should be running. I don't understand how I should be moving in my sport.

# [0:45:00]

And if you're making contact with the ground, you better look at your feet and what's going on with your feet because that's a very important component of the rest of your bodies mechanics. And if you take off your shoes, things work a whole lot different unless you're a person who has abused their feet for your entire life and now you're addicted to your shoes.

And if you take your shoes off and you're addicted to your shoes, now your feet collapse. They don't work well and neither does the rest of your body. So that's how I originally got into it and I realized that many athletes because they wore shoes all the time that even at home, that the muscles of their feet were much weaker.

In evaluating a lot of the individual muscles, the photo was very clear about which athletes had the worst shoes based on their muscle function of their feet. And so it was an easy leap to okay we need to rehab your feet how can we do that? Just walking around barefoot will eventually correct a lot of those problems and that's how that all began.

Robb: And clearly the spot for folks to start with is just walking. I think that we've seen some push back on the unshot or minimalist running kind of approach but it seems like folks are going from wearing a highly supportive, very shock absorbing shoe and then they ditch their shoe, put on a pair of like Vibram Five fingers and then they try to run the same mileage immediately with no adaptation period, no ramp up time. I mean is that how you would generally take somebody that is possibly a little on the broken side? It's just getting to walk initially and then run from there.

Sure. Yeah, it's got to be done very carefully because if you - imagine you're an inactive executive sitting at a desk whole day. You come home and you sat on your couch all the day and the only time you get up is to walk over to the dining room table or go to the bathroom or go to the bed and you decide well I'm going to run a marathon. And you go out and start running five miles or you try to. You know you're going to crash and burn after the first day.

> So it's the same thing with the feet. You've transitioned into a bad situation from a biomechanical stand point and transitioning out of that isn't going to take as long but it could take a while. There was a recent study that compared the thicker shoes with the Vibram Five fingers which is a good shoe but it's flat.

> What they did was they looked to see what the running economy was like and they compared the running economy initially to the thick shoes versus the Vibram's and they didn't see any difference in running economy. But they then allowed the runners to wean into the Five fingers, get used to them. And it took about a month and after a month the running economy in the Vibram's were significantly better.

And the same thing happens with barefoot running. You're going to take a certain amount of time to adapt and that adaptation is mostly because the muscles are weak literally weak from a power standpoint. Because you weaken them by wearing shoes for so long. And it's going to take a little while to get a certain amount of strength and balance, two separate things, back into those muscles and how long that takes depends on how bad your feet. But it could take a few weeks easily.

- Robb: Doc, it's been fantastic having you on the podcast. Folks can track you down at philmaffetone.com do you have any other new projects coming out soon? Or where can folks track you down besides the website?
- Phil: That's the best place. I used to write for various magazines and it wasn't fun. There were too many editorial issues now I write things that I think of whether a lot of people are going to find it interesting or not and I post

Phil:

[0:50:13]	End of transcription
Robb:	Okay. Bye, bye.
Phil:	Thank, Robb.
Robb:	Awesome doc, well take care and I'll talk to you soon.
Phil:	We do.
Robb:	I will do my best. You and I definitely have job security in the things that we're trying to promulgate that's for sure.
Phil:	Robb, thanks so much. It's been a real pleasure to be here and keep up with all the great work you're doing.
Robb:	Fantastic. Well doc again, I've been a huge fan of your work. You've been incredibly influential towards me in my development as a coach and it's just been a huge honor having you on the show.
	it on my website. There's some misspelling there and maybe some bad punctuation which were my two worst subjects. But that's really where I am in the world right now on philmaffetone.com.