

Scott: Are we recording? It was a miserable, miserable day for me.

Don: Okay. Welcome to ...

Scott: No, "Thanks for joining us..."

Don: I do "Welcome to..." Okay, so we're ready. Go ahead, Scott. Kick this thing off.

Scott: Thanks for joining another edition of Trail Runner Nation. My name is Scott Warr.

Don: I'm Don Freeman. We're here today. Scott, where are we today?

Scott: In the kitchen.

Don: We are in the kitchen with Phil Maffetone, and how lucky are we?

Scott: That sounds like a cookbook.

Don: We are. In fact, part of the topic today is in fact nutrition, which is an important ingredient to being a successful endurance athlete.

Scott: If this is the first time you've heard the name, Phil Maffetone, go back on to our website, [trailrunnernation.com](http://trailrunnernation.com), and put in the search engine "Phil Maffetone" and go listen to the first podcast so you will be blown away and the second podcast will make more sense to you.

Don: I think that the message from Phil is spot-on for what we do. We talked about monitoring your heart rate and staying within the zone. For many of us we thought the zone was quite high. We thought zone was where we could exist without passing out, but we found later that then through research and through lot of Phil's research that, in fact, if you stay within the appropriate zone where you can speak easily and stay below, for me at least, below 130 beats per minute which is quite comfortable, that I can learn to become efficient. My body becomes efficient and the reason is perfect for us. We spend a lot of time on the trail. There are lot of runs that are an hour long, 2 hours long, races that are 5, 6, 20 hours long, and when you have to exist that long out there on the trail with your heart working and your body moving you forward, you need to be in a zone that's comfortable.

Scott: So Phil, thank you for joining us.

Phil: Thank you, Scott and Don. It's great to be here again and it's great to meet you in person which is always a lot more fun.

Scott: It is. The last podcast was kind of centered around the *Big Book of Endurance Training and Racing* which is a big yellow book. Today, we are going to fast forward to his latest book which is a big red book called the *Big Book of Health and Fitness*, although it has a yellow spine so if you're in Barnes & Noble trying to find this and you just see a yellow spine, don't let that fool you. This one is more centered around Phil will help us out here. It's more centered around healthy nutrition and overall fitness versus endurance training and racing, correct?

Phil: And health. It's really the foundation of training. In the *Big Book of Endurance Training and Racing*, I do talk about diet and nutrition and lifestyle practice like stress and other things, but the *Big Book of Health and Fitness* is strictly about how to really solidify your dietary, nutritional, the stress factors in your life. How to get extremely healthy, and if you're getting very fit and you're not healthy then your fitness progression is going to plateau at some point.

Scott: Is it possible Phil, that in the cardiovascular fitness, the high level fitness but not a healthy person?

Phil: Oh sure. It happens all the time and unfortunately we read about it all the time. Every time there's a big race it seems. A marathoner dropping dead halfway through a race, a triathlete dying in the water soon after the start of a race, well-known runners or great marathoners who have heart attacks. If you have a heart attack, you are not healthy. So you could be fit, you could be America's top marathoner and die of a heart attack like I want to say, Ryan Hahn. I hope I'm not getting the name wrong.

Scott: Ryan's alive and well.

Phil: Okay, I'm sorry Ryan.

Scott: Jim Fixx, from back in the day...

Phil: Jim Fixx, and I wrote a lot about Jim because I knew Jim. I wrote, I had just recently run the 1980 New York City marathon and I was doing that race to kind of prove to myself that I was healthier and I ended up crashing at 18 miles and really struggling to get to the finish line which I was able to do and I got to the finish line and they carried me away to the medical tent. I saw all these runners who were the medical tent runners and all these doctors and nurses running around the medical tent, and I realized that I hadn't gotten healthy. All I had done was get fit enough to 26 miles which is really is pretty easy. The hard part, and for many athletes the very difficult task, is getting healthy.

Scott: From what you just said, I'm going to jump to a conclusion that our listeners have not read either the big yellow book or the big red book, they should start with the red book first.

Phil: The red book is the foundation. If you want to get yourself healthy and there is a little bit in the red book about heart rate monitoring, the 180 formula is in there, there's a little bit about training, but it's not really a training book.

Scott: Okay. I want to get into the guts of this thing. Talk to us about carbohydrates. The one thing that the general populace, they've heard of Atkins diet and the low-carb diet and that sort of stuff. You describe in the book that there are good carbs and bad carbs. Can you elaborate on that a little bit?

Phil: Sure. The good carbs are the natural carbohydrates that we find in fruits and vegetables for the most part. Honey is a natural carbohydrate that can be a good carbohydrate. Of course, you can overdo anything and people often find ways of overdoing things but natural carbohydrates are generally healthy. There are some people who are so unhealthy and their body has made unhealthy changes that are somewhat permanent like a diabetic or a pre-diabetic or someone who is carbohydrate intolerant which really could be 75% of the population if we start looking at, well, let's look at the overfat people. How many overfat people are there? It's about 75% of the population.

We could say they've made changes in their body that are unhealthy and they would have to limit some of the natural carbohydrates like fruits, but the unhealthy carbohydrates is virtually everything else which is the food most people are eating. All of your processed flour, all of your sugars, they are in everything, they're in junk food, they're in a lot of the foods that you can find in a health food store but they are not healthy. It's the food people eat everyday and all day and the reason why they're overfat.

Scott: Let's talk a little about we going to REI which is my favorite store by the way because they've got everything there. Just looks like fun and vacation. It is my toy store. You've seen those Home Depot is my toy store. Home Depot is my prison. I don't even want to go there. That means work. I want to go to REI. I go to the nutrition section and I see all of the GUs and I see the gels, and the blocks, and etc., you've been through much of the shelves, how much of that, what percentage do you think is valuable for me and what do you think I should take a close look at, what's really just a modified candy bar?

Phil: For you in your life, not during a race, all of it's junk and you should stay away from it.

Scott: Wow, during a race.

Don: That was my question. During the race there is a place for it? I found my reason to run because I could eat the junk if I'm on the trail ... so go ahead.

Scott: You know that comes back to what you told me at Western State, that as long as my eating no, no ... you can edit that out.

Phil: It comes down to insulin, so when you're not running and you eat carbohydrates, you produce insulin and the more refined, generally speaking, the more refined the carbohydrate the more junky the food, the more insulin you make. What insulin does is it shuts down your fat burning. It causes the body to take 40% to 50% of those exotic candy bars, even the low fat ones, even the no fat ones and convert that carbohydrate to fat and have it go into storage. That's not what people really want to do and it's what the food has made you do in addition to making you addicted.

Scott: Okay, you said something that I've never heard before or at least may be I've heard it and I just didn't comprehend it. You said when insulin is produced, fat burning stops?

Phil: Yeah. When insulin goes up, insulin does, a number ... insulin is a very important hormone. We need insulin otherwise we die. In diabetes what happens is the pancreas burns out because it's been overproducing insulin for so many years, it burns out. Now the person is clearly diabetic and they need to take insulin from outside sources, but until that happens you make too much insulin for the amount of carbohydrate you eat. What insulin does?

It does a bunch of things. The 3 very important things it does is it replenishes your glycogen stores. If you have 100 gm of carbohydrate and you produce insulin then maybe 10 gm of carbohydrate will go toward replenishing your glycogen stores if you need to do any of them. About half of the carbohydrate that you eat, so about 50 gm goes toward immediate energy, so it raises your blood sugar and your body uses that as an energy source and as you use it up insulin takes that carbohydrate, that glucose and brings it into the cells and then the other 50% of the carbohydrates, 50 gm is converted thanks to insulin to fat and stored for later for whenever you want it. If you're continually eating carbohydrates and just making a lot of insulin and then ...

Scott: For never.

Phil: The fat burning is reduced significantly so you never burn that. What we see, last summer was the first athletic race I was at. I'm working with a woman, a Canadian triathlete enduring that and apparently got to one of her races. I had been to a race since Mark Allen's last race whenever that was, many, many years ago.

I am not being judgmental. I was shocked at the number of competing athletes who were significantly overfat. A big problem in the running community I know because I get all these letters and I get letters from editors who say there's a big problem with runners because their body fat content keeps rising and how can we address this. How can we do that carefully without offending because fat is an offensive word for some people. I know why but it shouldn't be and if we keep running away from it it's going to keep being a problem, but it's a problem. It's not about how many miles you run a week and how many calories you burn. It's about how many calories of fat you burn and how many calories of fat you don't burn.

Don: You've said a few times overfat instead of overweight? Is there a reason for that?

Phil: Yeah. I coined this word overfat many years ago because the authorities, the people who are kind of in charge of coming up with words, obesity and then they define obesity. Well like it often happens in healthcare, they kept changing the definition. Here's the line for obesity. Okay so if I'm a few gms below that, I'm not obese, so I'm okay. Then they didn't really have a good word for overfat for people who had a lot of body fat but they weren't obese and maybe they weren't overweight, but the overfat word just takes all of those problems into one category. You're overfat if you're classified as obese or not, you're still overfat. If you're running 120 miles a week and you've too much body fat, you're overfat.

Don: Probably prone to injury.

Phil: You're prone to injury for a variety of reasons. One is because you're probably heavier although fat doesn't weigh much but you're probably heavier and your gait is probably altered. When your gait is altered because your body fat is high, you don't land on your feet right, your joints are under more stress, but there is a metabolic factor involved too. When you're overfat, your body metabolism is not healthy. It's not normal. Your hormones are out of balance. A variety of things are not right and when the body metabolism is not right, it has an effect on body mechanics.

Scott: I want to stick around this topic for a second about how we train ourselves to become sugar dependent that we maybe had lack of sleep then we eat sugar to try to get a spike in energy and it's kind of ongoing psycho and eating out on the trail where we teach ourselves and learn to recruit this sugar content through goos or blocks or whatever just to keep us moving out there when in fact there's a solution perhaps our own body fat that we can use as a fuel because that's what it was intended for, right? The fat is just making it easy to sit down and maybe keep us a little bit warmer during the wintertime. It's also there for real

energy for movement. That food wasn't always available at every given time and in fact that's what this fat was for.

Phil: Right.

Scott: That was always convenient. We didn't walk around in the olden days with goo packs and aid stations.

Don: We had our own aid stations Scott. We just carried them.

Phil: Paleolithic glue.

Scott: Say that again?

Don: Paleolithic glue. I'm sorry Paleolithic goo.

Scott: There you go then.

Phil: That's a song [inaudible 00:15:15]

Scott: Just not a thought leader in this area. How do we then, because I'm afraid that I maybe a sugar-dependent body when I'm out there. I have trained myself over the years to carry a pack. When I've enough fat on me, I don't need a pack. Well my pack is full of this gel and stuff. How do I observe myself to know 1, am I that guy and 2, how can I slowly change from that guy to somebody else?

Phil: There's a lot of ways of answering that question. One way is that if you have to rely on goo or some other carbohydrate source to get you through a 2-hour run maybe a 3-hour run even then it means you're probably are not burning enough fat because you should be burning a lot of fat on those long easy runs. That's a significant source of energy for the human body to burn both sugar and fat.

Scott: That's what comes into you need to be running at a slower pace till you're burning more fat than sugar.

Phil: Well you need to be running at the proper rate so that you're training your body to burn more fat and what happens is you don't train your body to burn fat during the run. You do that but you're also training your body to burn fat for the next 24 hours even when you're sleeping. So if you're not a good fat burner, you're not burning fat on your run, you're not burning fat during the day, you're not burning fat when you're sleeping like you should. Just look at the human body is having these two fuels and we use other things that we don't want get into now but carbohydrates which will be glucose and fat and we should have a high amount of fat burning at rest and when we're doing aerobic training.

Scott: Well, let me ask you this if you're being efficient in your training to burn fat, does that automatically roll over into the 24 hours after training that you're burning fat?

Phil: It does but the issue is and the question I thought you were going to ask me is does diet influence that. Diet will supersede your training in most cases for most people. If you're doing everything just right in your training, if you're following the 180 formula and you're using the heart monitor and you're very disciplined, you're warming up and cooling down, doing all that stuff and then you go home and have pasta for dinner and cereal for breakfast and a bagel with low-fat cream cheese for lunch, you're wasting your time. You're not going getting your training.

Scott: So what should I be eating?

Don: This is Scott's favorite subject. Can you tell?

Scott: That's because I'm overfat. I'm that guy! You were saying, how do I know if I'm that guy, look at me. I'm that guy ....

Phil: First of all you have to get it into your brain that companies that sell refined carbohydrate products which are almost all the products in the grocery store want you to think is that sugar is healthy, it gives you energy and it's low-fat so it's good for your heart and all and it's all a lie. Everybody knows that. Everybody scientifically knows that, everybody who is educated enough in nutrition knows that but the ongoing hitting us over the head advertising which has been going on since before we were born. We are talking about the early part of the 19<sup>th</sup> century. They just ... sugar was the big thing and they found always ways of doing it. They even got the government involved to recommend sugar. It's on the food pyramid, used to be the food pyramid. I don't know what they're doing now.

We need to overcome that problem and say I'm not going to eat fake food. I'm not going to eat refined carbohydrates anymore. You get rid of them and as soon as you get rid of them and you eat meals that are without those refined carbohydrates, it just takes 2 meals and you shift your body into a high fat burning state very quickly.

Scott: In 2 meals. Two meals, wow.

Phil: There is a 2-meal affect because of insulin. When you eat a meal the amount of insulin you make is based on the meal you eat plus the previous meal. Your brain remembers that and so it's an interesting thing, but it just takes 2 meals and then you quickly can go into fat burning.

- Don: Do you cover some of this in your book, the *Big Book of Health and Fitness*?
- Phil: Yeah. This is extensively discussed in the book and it's sort of a theme throughout the book. I talk about that early in the book and then when I talk about running or walking or exercise, I talk about burning fat and then I refer back to that issue because it's all connected. When I talk about stress, I bring up the carbohydrate-insulin issue, fat burning issue again because stress will kind of do what insulin does. It will impair our fat burning if there's too much of it.
- Don: You trained a lot of athletes and lot of very successful athletes. Have you trained someone in only modified diet only and said, "You know what, you're on point with lot of your training but let's modify your diet and redirect it." What kind of changes have you seen just with diet change only?
- Phil: Yeah. I have seen dramatic changes with diet recommendations only and it's because it's such a powerful component. Sometimes when I'm traveling around lecturing for example, and someone comes up to me afterwards and said ... and I'm thinking of an actual event that took place last month or so. I had lectured about some of this kind of stuff and this gentleman came up to me who was a doctor from somewhere and he said I've got all these injuries and then I've been increasing my body fat for the last 10 years and I've been really, really tired and I'm having to drink more caffeine and on, and on, and on.
- I asked him about his training and his training sounded really pretty good. I said do one thing. Sometimes you overwhelm people just listening to this podcast might be but sometimes if you can just say, "do this one thing" and that's what I did with him. I said, "Do this one thing. Just avoid refined carbohydrates." That's all.
- Don: If we did that one thing, how long will you recommend never to go back to refined carbohydrates but if we stopped, when can we expect to see some type of positive benefit? What's the risk reward here? The risk is losing our carbohydrate but ...
- Phil: Very, very quickly and I can't give you an exact time frame because everybody is a little different but very quickly. In the book there's something called the 2-week test and I have a 2-week period where I suggest that people go cold turkey for 2 weeks because I know that within the 2-week period, they often will become a different person but it can happen after 2 days and 3 days. I've seen people turn around from a health standpoint, eliminate signs and symptoms that they were going from doctor to doctor to try and get treated, taking various medic ... just amazing, some of things I've seen because of carbohydrates.



Don: It is not reportedly better out the trail or the bike or whatever sports you're into. There's also long-term health consequences, chronic illnesses that are tied in with this

Phil: Exactly and we are talking about virtually all the chronic illnesses, so heart disease, cancer, Alzheimer's, many of the so called aging related diseases, macular degeneration. Anything related to chronic inflammation because that's the intermediate step you go from this blood sugar disorder and you become chronically inflamed, so whether it's arthritis or muscle imbalance, the typical injury in a runner is due to muscle imbalance. It may not be disease there but there's an imbalance in the contractibility of muscles and it's a brain-muscle problem. Some muscles are contracting too much but some are contracting too little. That kind of imbalance can come from carbohydrates and it can be corrected.

When we cut our finger we don't have to run to the doctor. We don't go to emergency room because we got a cut finger. We just put the finger in our mouth and we lick off the blood and it heals up. We don't have to think about it. We don't have to know the physiology of it. Most things are that way.

We have a knee problem, the body should fix it. We have a shoulder problem, we have fatigue, we have a plateauing in our performance, the body should fix that and so if the body can't fix it then we get stuck in that mode. We are stuck with this chronic knee problem, we plateau, we can't run any faster, and the biggest problem associated with that, the most common cause, is the carbohydrate problem.

Scott: We know that diabetes affects the peripheral nervous system, right. I would think that what are you talking about this muscle imbalance could tie right into that before we see the end stage a peripheral nerve problem, there's going to be some dysfunction along the way too so ...

Phil: Exactly and that's the gray area. A lot of people are not used to seeing the gray area, conceptualizing what these gray areas are. There are problems that occur before you get a heart attack. There are many problems that occur before you get cancer. There are many signs and symptoms. There are many clues. In the book, I have a list after list of clues, signs and symptoms that people really have. What are the signs and symptoms of chronic inflammation? What are the signs and symptoms of carbohydrate intolerance? Well you can eat carbohydrates without them hurting and the book is full of those lists. As you go through the book, you read these and then you say, "oh, that's me." That then enables you to stop and focus on that particular topic even more.

Don: Athletes are great because there is good and bad to the athlete. When you're working with one, they want things to happen immediately. They want to recover from an injury in about two and half hours from the time they've been diagnosed and they expect that and they really want that and figure if they try hard enough, it will happen, but it takes time to recover and that's part of the equation.

Phil: Let me just interrupt ...

Don: Yeah.

Phil: Please a second. That's an important point because early in practice I had to get the attention of athletes. When I saw Mark Allen for the first time, I had already learned this. It was 1983 and I thought, I need to, this guy has some potential I think.

Don; You think ...

Phil: He had this calf problem and his biggest concern was that he had this calf problem and he had a race the following weekend, and he wasn't going to be doing the race because he had this calf problem. I said well let me take a look and I evaluated and he had some simple muscle imbalance and I corrected it, and he was fine. He did the race, actually he won the race, it was a little triathlon back then there were all little triathlons, but it caught his attention. Then ...

Don: How did you fix it?

Phil: I evaluated the muscles. I found a muscle imbalance. There was a small calf muscle under the big muscles, the posterior tibialis muscle that was weak and I did some biofeedback and was able to get it working again. Simple thing. Those were simple things, but I said there's a big picture here. We could treat your injury and then wait for that injury to come back or wait for another one to come back and fix that, but that's not what I'm all about. I don't think that's what you should be all about. This is all related to performance and you making progress because if you keep getting these, you sort of hit a plateau. I got his attention and he said, "What else can I do?" I said, "Well let's talk about fat burning" and that led to the dietary aspects and the heart monitor stuff and all that.

Don: Did his body composition change much? When you started working with fat burning did he look like a different athlete?

Phil: He did. He looked like he was bulking up more. Now I'll tell you what, one person who got that comment and questioned are you lifting a lot of weights was when I started working with Stu Mittleman.

Stu was fairly lean and we did the same thing. He had an injury and I was able to correct it, and really by the next day, he was fine but I said, “you’re doing this long distance stuff, these long races and you need to burn a lot of fat and so we’re going really have you build a big huge base and have you burn as much fat as you can burn.” Within a few months, he looked like he was bulked up because he lost a lot of body fat from his surface areas and his muscles were more exposed now. So it looked like he was bulking up which he wasn’t and a lot of people asked him and asked me then. “Do you have Stu on a big weight program?” No, no. He just burned off some body fat?

Don: Before you get to your point Scott because we compete here for questions, I’m got to finish up on what’s the good and bad of the athlete and the bad was athletes want to respond quickly and all the sudden go from diagnosis to a great training run the next day.

Now the good part I think about athletes is that we learn to listen to our bodies unlike many, many other just general population athletes are tuned into what the foot feels like, what the ankle feels like, what’s my knee doing, what’s the thigh doing. We really learn to listen to our bodies very well, and that same listening to the musculoskeletal system could be then I was thinking converted but identified with our visceral system or organs how does the stomach feel. We learn to listen what’s happening below our necks which I think is a very good tool and like you said if you use the tools that are in the book and become aware of some of the science, we train ourselves to listen. We just need to know what to listen to. I think that could be a good exercise for all of us.

Scott: I was just going to move on to talk about proteins and fats.

Don: You’re done with carbohydrates, Scott?

Scott: Oh, I’m not done. I think the audience is pretty done.

Phil: You’re not going to eat anymore.

Scott: I think I’m going to go on a 2-week fast.

Don: When we talked to Dr. Knox and we can't drink water anymore. Now we can't have any carbohydrates, there’s not much left.

Scott: Actually we were going to learn about water here.

Don: Okay, good. Good.

Scott: Let’s get into, I don’t know where do you want to go fats or proteins?

Phil: I love fats. Fats are what give food flavor. Fats are the deliciousness of meal. It comes from fats so when you have a low-fat food item you lose all the taste. When you lose all the taste if you're a manufacturer you got to say okay what am I going to put back in? Sugar.

Scott: Sugar.

Phil: I remember the point in time that in the mid-'80s I think I was walking through the Chicago airport and there was a big sign that said we have no fat cream cheese. I'm thinking no fat cream and that's what manufacturers have done. They've done the most absurd things and the public buys it. The person who buys that no fat cream cheese will store more fat than if they ate real cream cheese.

Scott: People I think the general public and even beyond equate on a nutrition label fat to becoming fat.

Phil: Exactly. That's what the public has been fed for years and years and years and it's the calorie theories, the calories in, calories out theory of weight loss and it doesn't work because if you just look at calories in and calories out you don't consider the metabolism of the body. Fats have twice as many calories as carbohydrates and proteins.

Scott: I think most of us know some of the good fats like avocados is a good fat. Nuts have good fats. What are some of the other ones that ...

Phil: Olive oil is a great fat, butter is a great fat, coconut oil is a superb fat.

Scott: I just want to comment on the butter thing. We were just talking my wife and I to our kids and how when we were kids butter was like bad and so we ate all this margarine as kids. You remember margarine, you're crazy and now we're finding out that that was the worst thing we could have possibly done.

Phil: Why are we finding out now when in the late 1950s they were writing about scientifically the dangers of margarine and that it's not the kind of thing you want to give to a heart patient. It's not the kind of thing you want to give to anybody but the manufacturer, the companies that made these products took over. They convinced the government that this is the way to go. Now they have a little heart on it ...

Scott: Makes it healthy, two hearts those prints about the label.

Phil: The butter, the coconut, milk fats. Well milk fats are generally good that's what butter is, it's a milk fat. If you take the milk fat and skim of the proteins the

wheys that's called drawn butter or ghee. Ghee is the purified butter which doesn't have anything in it but the pure fat and that's generally healthy. If you're allergic to dairy if you're sensitive to dairy you might want to only have ghee and most people can handle that.

Scott: I think fats also make us feel full and satisfied.

Phil: Oh yeah, the worst thing in the world is to have a lot of carbohydrates and low fat and you might feel full for several seconds but then you're going to bang, you're going to be hungry again.

Scott: That's how long it takes me to get my fork down to my plate again. It's not my problem and they're just expanding our stomach right. Continuously stretching that stomach so that we can accommodate this need for more calories or more ...

Phil: One of the classic signs and symptoms of carbohydrate intolerance, the inability to handle carbohydrates is a bloating feeling, gas lots of gas. What we do is we consume these carbohydrates and they cause a lot of gas production and you shouldn't eat them.

Don: I like pasta though. Okay I'll do better, I'll do better. Let's get to proteins. You know that's been a for years and years ...

Scott: Oh hold on I'm not done with fats yet.

Don: Oh okay sorry.

Scott: What about, what about fat on a trail run or in an endurance event? Would you say that there's a place to ingest fat out there would be a good substitute for energy production?

Phil: There is yeah and now we're getting to an area where we have to mention this individual component. Everybody's a little different so what will you work on, what will help you the most in a long western states or beyond a marathon or maybe even beyond a 50K. What kind of food and it all comes down to trial and error. Try things out and see what doesn't upset your stomach, see what gives you the energy because we do, we can use carbohydrates for during the runs and maintaining fat burning but protein can be helpful too and fat can be helpful as well.

I don't race anymore but if I was doing western states I would probably, I would probably make a product called Phil's bars and in that red book there's a whole bunch of recipes. One of them is the Phil's bar recipe. It's an energy bar, it's

made from almonds and honey and coconut and very, very healthy stuff. I use Phil's bars when I travel. I make as many as I can. The problem is they sometimes look like C4 so when you go through security and they want to poke their finger in it but it's a whole meal.

You can make them higher or lower calorie by making them larger or smaller and I would use those on the trail. It's all ground up so you don't have to ... you really don't even have to chew it and you'll get the nutrients out of it very quickly and there's carbohydrate, fat and protein.

Scott: I remember and correct me and straighten me out here that I understood that we needed some carbohydrate to bring the fat out. Maybe that was propaganda I don't know.

Don: Sunny's talked about that.

Scott: Where a little bit of carbohydrate was required to like the kindling of further fire. You needed a little bit you can't just rely on them.

Phil: Exactly but that doesn't mean we should go out for a run and after an hour we're dying for some carbohydrate. What that means is we're not burning our own body fat so that's the first thing you have to do. You have to get your body burning fat for energy first. Now you can go 2 hours, 3 hours without anything but water maybe water if you need it. Then beyond that now you can start trickling in some carbohydrates but the amino acids that are part of proteins can be converted to glucose.

We have a potential source of glucose there. Many people if they eat too much protein can produce too much insulin from that because you're converting some of those amino acids to glucose. We can get some of that glucose on the trail from a fat source as well.

Scott: Do you recommend having a meal before a run or at some point or just empty stomach, roll out of bed, put on the hocus and go.

Phil: Yeah it depends ...

Don: Hocus. We didn't get the hocus, do you have it?

Scott: No. We've got a pair in the truck when we go for drives.

Phil: There again you have an individual kind of thing. Early in my distance running life I would not eat before a run or a race and then probably when I hit my mid to late 30s for some reason I just felt better having a meal 2 hours before the run

but it was a low- or no-carbohydrate meal. It depends on the person, but when I ... not just me, but when anybody measured, you can measure fat burning, sugar burning very simply.

Scott: Tell us.

Phil: Why most runners don't relate to this I don't know but if you do if you have a [inaudible 00:39:27] test, they're gathering the data that will also tell you how much fat and sugar you're burning at different heart rates but [inaudible 00:39:34] is such a ... it's an obsession which has very little to no meaning, but it's an obsession. Everybody wants to know the [inaudible 00:39:45] number. You know it doesn't mean anything but at the same time the fat burning/sugar burning relationships were found the percentage. You can look at that data and say, "Oh at 120 heart rate I'm burning 70% fat and 30% sugar" and whatever.

When I would do those tests when other people do those tests if they don't ask you what you had for your previous meal, it's a terrible thing because your metabolism could be misguided. If you have pancakes for breakfast or cereal or a bagel or some refined carbohydrate and you go on to the treadmill, you do this test, your fat burning is going to be way down your sugar burning is going to be way up and that should tell the people the story. If you say okay we're going to do this test again tomorrow or next week or whatever but I want you to have eggs, cooked in butter with some vegetables and then that's your pre-test meal.

Now they come in having not had the refined carbohydrates, now they're fat burning is way, way up here and their sugar burning is way down here and that's the way should be. That'll give them more endurance.

Scott: Good. I think I've wrapped my fat up.

Don: Proteins, proteins.

Phil: Proteins. Oh boy we need it. The negative slant on protein has been on and off for many, many years and the weight lifters have sort of helped to bring to light the fact that we need protein except they've gone to the extreme with massive amounts of protein. We need the amount of protein we need and it's up to you as an individual to figure that out and the only important thing I'll say in addition about protein is that are the best sources are animal sources. This notion that we can get high quality protein sources from vegetables and grains and soy and all that stuff just doesn't work. It just doesn't work.

Scott: I'll ask the follow up question to that you know there's I think recently even there's a big push, a big fad to go vegan. You would probably laugh that off. I

think this may go on for a while. I think there's more also runners that are doing vegan now.

Don: Yes and I ran into a freegan. You know what a freegan is?

Scott: A freegan meaning vegan no?

Don: It's someone that prefers to be vegetarian but will eat anything free. He was a college student. I appreciated that.

Phil: I'm a meat-eating vegetarian. There's all different types. You have to know what type you are.

Scott: Let me ask you this. I mean many of us grew up with this crazy food pyramid where two-thirds of our diet should be processed carbohydrates. What would you advocate sitting down for a meal, what portion should be good carbohydrates, what portion should be good fats and portion should be proteins?

Phil: Well it should all be good carbohydrates, fats, and proteins and I should mention that ...

Scott: At what proportion?

Phil: Yeah. It depends on the person but the majority should be plant foods so vegetables, primarily vegetables and fruits.

Scott: Are there are bad fruits, I've heard there are bad fruits.

Phil: Well there are bad fruits because agricultural scientists have made them bad. We have pineapples now most pineapples, bananas, water melon very high glycemics, and when we eat these seemingly natural fruits we produce a lot of insulin more than we would have if we were eating the natural pre-agricultural fruits.

Scott: Okay.

Phil: Dry fruits, many people just can't eat dry fruits. Just too much sugar and too much insulin is produced by them.

Scott: Some of them are coated in sugar.

Phil: Oh yeah.



Scott: Some of the dried fruits. We're not doing ourselves any favor by sucking on the coated dried pineapple.

Phil: Oh yeah.

Scott: I've dried my own pineapple. I go where is this nice lightly coated sugar on the outside of my pineapple. It's not here.

Phil: Yeah, yeah, bananas but they ... I've seen dried bananas in sugar, and everything has sugar added because it sells.

Scott: It's all about moving the dollar.

Phil: Yep.

Scott: That's what corporate America is driving.

Phil: It is and they're succeeding and the result is chronic disease, a population that's 75% overfat, and we're not just talking about Americans. Everybody wants to be like Americans, though you go to Japan you go to China and you go to Europe you're seeing these massive numbers of overweight people and that's very, very sad.

Not only that in one generation the third world countries that we were collecting money because they were starving to death, in one generation they'd gone from starvation to an overfat to obesity epidemic. That's an incredible feat and it's all because of the sugar and the white flour that they'd been getting for decades.

Scott: Our grandparents that were on the farm that had a pound of bacon and a big slab of butter and had the grain fed beef that had been around the field or harvested their wheat and ground their own wheat, they were eating much, much better than we're now.

Phil: They most definitely were grass fed not grain fed.

Scott: Many, thank you, and many of the conditions that we see today the diagnoses the things like chronic illnesses which just were not present or not diagnosed because they didn't understand it what I mean what would you ...

Phil: Yeah they were consuming foods. It depends on how far back you want to go. It depends on where these grandparents were. In the cities you had a lot of bad food compared to the country and the country people worked a whole lot more physically and they ate a lot of the food that they worked to grow or raise so but that's all gone.

- Scott: They didn't have seat belts back then so they lived more. It was not from their diet, right? It was from some other things. There are something's that are safer and food safety and I think that's always the plus. We're not dying from food that is poisonous except for the type in the way it's processed.
- Phil: The food safety issue is something that we've improved immensely over the decades. We don't that the bacteria-ridden foods but we have chemical. We have so many chemicals in the food and there is an allowable amount which is an insult. How much of this poison should we allow in the food?
- Scott: I worry about that. I go and buy some vegetables then I'm thinking am I doing, is there a net gain here that I'm eating these Brussels sprouts or am I eating really a green small piece of cabbage with all kinds of pesticides riddled throughout this thing. Maybe I'm better off not eating it.
- Phil: Well you're better off getting organic Brussels sprouts.
- Scott: Right.
- Phil: As much as you can buy organic food because there are standards. They are fairly strict. They are strict as anything else in the food supply and it's a little more expensive but you can buy organic food. Today there are many local organic farmers that may not be certified organic but if you get to know them you could find out what they're using if anything. I grow most of my own fruits and vegetables. That's another way of doing it. Most people have enough land even a tiny little patch in the backyard to grow an immense amount of food.
- Scott: My tomato crop has fed a lot of birds. It's my territory. Oh man, I'm telling you. I don't know if they like plants, 68 tomato plants like as one for me and 67 for the birds.
- Phil: Well we have 5000 to 6000 square feet of garden and about 3 quarters of it is covered with I want to say chicken wire but it's really stucco wires. Stucco wire is half the price and it's a lot easier to work with. You can get really wide roads but it keeps the birds away. In Arizona if you don't do that you lose it all and probably here too.
- Scott: Yeah. It's 2 questions that I have. One of them is that we didn't touch on when we talked about carbohydrates but that is sugar substitutes. They're not a refined sugar, they're not a carbohydrate, are they bad or are they not?
- Phil: Well they're highly refined and extremely bad. They're bad because number 1 they maintain your sweet tooth. Your brain ...

Scott: Doesn't know the difference right?

Phil: Kind of doesn't know the difference but not only that when your brain gets that sugar taste in the mouth that affects the metabolism and we go back to this fat burning/sugar burning thing. What does it do to that balance of fat and sugar burning. You can diminish your fat burning and raise your sugar burning in ingesting artificial sweeteners too, including Stevia. It's all natural and but it's all highly refined. There may not be chemicals in it but it's something to avoid and it maintains your sweet tooth.

When you maintain your sweet tooth, you're walking around. You didn't have any lunch and you're looking for something to eat and you tend to grab something that's unhealthy when you have a sweet tooth. When you have a sweet tooth you sense when you taste vegetables which tend to be bitter you sense them as more bitter and you so to tend to like them less and that's important with kids.

Don: That's why I don't like Brussels sprouts.

Scott: Oh you haven't had my Brussels sprouts. I bake them. Now before you get to your second question. What I heard you just say is that as soon as you put it into your mouth, your body then is put on alert whether we're going to be burning fat or sugar and even if there are zero calories in it, you're still changing your body's

Phil: Exactly.

Scott: Metabolism.

Phil: Yeah. We have a cephalic phase of digestion which means when we put something in our mouth we taste it. That taste as soon as you taste something it's only because the nerve endings in the mouth have sent a message to the brain telling the brain what's there and that sense comes to the conscious state and you say, "oh sweet" and so yeah. That's a serious problem.

Don: It alerts the rest of the body down below what needs to happen.

Phil: Everything [inaudible 00:50:40]

Scott: For lack of a better term, the gears are set into motion down in the digestive system based on what the mouth just tasted regardless of what's truly there. It's based on taste.

Phil: Exactly.

- Don: That's like radar, radar back in the days when they were watching planes come across the border, Scott, that's where radar comes from. Well that's like [inaudible 00:51:00]
- Phil: There was a recent study where they had cyclists tasting a sports drink and then spitting it out and they had controls and all that and found the ones that were spitting it out and only tasting it not ingesting it were responding to the carbohydrates.
- Scott: Wow.
- Phil: We've known that for, I've learned that as a student. We have laughed at one of the guys who the guy who had the dogs and the bells [inaudible 00:51:29] was a physiologist who studied digestion and he talked a lot about cephalic phase of digestion and that was boy 1910, I don't know early 1900s.
- Scott: I'm pretty sure I know what you're going to say on this next question but I want some [inaudible 00:51:47]. What about multivitamins?
- Phil: Boy, It's a big topic. I'd give you a couple of things. One is most of them are synthetic. Almost all of them 99.9% of the multivitamins on the market are made from synthetic vitamins. Number 2, they can be just as easily be harmful as healthy. Many of them, vitamins C for example synthetic vitamin C can become they talk about vitamin C as an antioxidant but vitamin C in high doses and high doses could be over 300 mg or 500 mg around can become a pro-oxidant which means it does the opposite of an antioxidant.
- Pro-oxidant activity is where we run into the cancer problems. There's a lot of ... if you're not sure what you need you shouldn't take anything. That's a good way to view it but the synthetic vitamins are prevalent because they're cheap. They're easy to work with. They have a long shelf-life. My general feeling about it is that you should get your vitamins from your food and if you're getting organic food or growing a lot of your own food, you're getting a lot of vitamins. Yeah the soil maybe isn't as good as it used to be but it's still pretty good and we're capable of getting a lot of these nutrients from our diet.
- Scott: Excellent. Let's talk a little bit before we close up unless you have something else [inaudible 00:53:17] .
- Don: Yeah I want to ask one question here. There is a chapter, chapter 12 that's called the healthiest diet, follow your own nutritional intuition. I like that.
- Scott: Is that after you become healthy because right now my nutritional intuition is Big Mac.

Phil: You have 11 chapters to understand the goods and bads of different dietary components and it really comes down to I don't have a diet. People often ... there are different segments of the population who know me and there's one segment that knows me as the diet doctor and I really, I'm offended by that because I don't have a diet. I don't give diets. I've never given anybody a diet. What I do though is I encourage people to create their own diet what works for them. Another thing I often do is as they say well what do you eat, I'll do the same.

No don't follow what I eat. What I eat is what makes me feel the best and it's a little different than it was last year. It's a lot different than it was 10 years ago. Next year it's going to probably be a little different. You got to be able to read your body like we were talking about before. Little signs and symptoms, little clues that you know this was too much protein or I need more protein or I need more fat and make those modifications because every animal on earth knows how to eat except humans.

Scott: That's interesting. Yeah there's a reason they could. You put it in chapter 12 it teaches what to recognize and what we should eat for the first 11 and I think that like you had said don't follow what I'm eating, learn how to be intuitive. It would be analogous to what I want to run like you. I'm just going to run my race and stick right with you and that is a recipe for disaster because you can't chart. There are different times in racing. You need to lay back and move forward. You just can't shadow somebody.

Phil: In the running community that concept run your fastest game in 6 weeks has been the mantra of Ryan's World magazine and I don't mind thrashing them because they don't.

Don: They don't listen to our podcast.

Phil: They don't. They do a disservice because it's not a magazine written by runners. It's a magazine written by advertisers. It's likewise for all the others. I don't want to single them out but people don't understand that magazines are run by advertisers and they dictate directly, dictate editorial. If you're going to write an article about how bad carbohydrates are you're not going to get it published in a typical magazine.

If you write an article about shoes being bad, you're never going to get that published in a running magazine because 80% of their revenue comes from running shoe companies. Be careful of what you read.

Don: I wanted to mention how and why we're lucky enough to have [inaudible 00:56:14] as he's out here in Sacramento and making an appearance. Tell us a

little bit about the other side of Phil Maffetone that many of us may not know.  
Musician at [inaudible 00:56:26]

Scott: Dr. Maffetone give us the other side. Tell us what are you doing tonight?

Phil: About 10 years ago actually 10 years ago this month although it's now so long that I can't use being new [inaudible 00:56:44] as it is but 10 years ago I woke up and decided to be a song writer. I didn't know anything about song writing. I didn't even know much about music other than I was a consumer growing up in the 60s and music was my life.

Scott: Yeah.

Phil: I always had music in my head and that was why as I later learned in school why I was a bad student. I would be sitting there listening to a teacher or trying to and I had all this music going on in my head. I soon realized it was original music.

Scott: Okay stop just for a minute. You said you were a bad student.

Phil: Terrible student.

Scott: You became a doctor.

Phil: Went to summer school every year. [inaudible 00:57:16] high school I dropped out of high school as a junior and vowed not to go back. That's a whole another story.

Scott: I didn't mean to derail you but ...

Don: That's okay. Einstein didn't know his phone number Scott.

Scott: What I'm saying is even though he didn't do well in school he, I don't know when you find your passion you learn. When you find your passion then you can excel.

Phil: That's exactly what it was finding my passion and back then and I had gone to school because I loved this running track and I wanted to do well and I did that and I did well really soon. The next day I came back and quit and got a job at the phone company but then a few years later I discovered my passion was to go back to school and become a doctor and help people. Well 35-40 years later, I wake up, "oh I want to be a song writer now."

Waking up and deciding to be a song writer and drop all that other stuff was no big deal because I already went through that. I said okay I'll do that and it was a few years later that [inaudible 00:58:17] and I were evaluating and I really kind

of got out of the doctoring world. I didn't coach. I didn't treat people. I got rid of my consulting practice. I didn't lecture I didn't write but I would help [inaudible 00:58:33] sometimes and we were looking at brain waves in a patient and I was talking to the patient.

She was setting him up and I was telling him about the song I'd just recorded and I said, "oh let me play for you" because she's not ready and I was playing on the song. She turns on the machine it's like your recording equipment and we see these brain waves that became these huge alpha waves that were just and that's when I realized that I didn't quit my career to become a musician. I was just adding to it.

Not that I didn't know about music therapy. I learned about that in Chinese medicine in the 70s, but I saw it with my own eyes. I saw how the brain was responding to the music and it was just fascinating. We started doing more of the combination of music and health stuff together and 2 years ago, we went on our 3rd music tour. I became a song writer and started writing music and then started performing, but 2 years ago I came up with this idea that we have a music and wellness tour.

We did that for 3 months last year in US and this year we're doing again. We'll be on the road 6 months in the US and we lecture about health and fitness and music. We sort of combine it all. Music is much like the information in that book from a nutritional standpoint from a dietary standpoint, proper training. There's nutrition, diet, training music. Music is a huge potential therapy. It's a great way to reduce stress. We talked about cutting your finger and having your body heal it up. Well what music does is it reduces stress hormones so it actually can make your body more immune to the stresses of life.

Scott: I've got an obvious question. We've got bad carbohydrates and good carbohydrates so what about good music and bad music? Can it be detrimental?

Phil: Boy you got another, you got another ...

Scott: Marilyn Manson probably ...

Phil: Increases stress right?

Scott: I don't know. Well what's good for one person might be you know bad for another, I don't know.

Phil: The industry has changed a lot lately. I'll give you a little nibble of an article I'm writing. Scientists have found that song birds have become extinct, send up a red flag obviously before they become extinct and the red flag is that their songs

change. The frequency changes. There are a lot of differences in and then in 2005 there have been a few articles that looked at human music. In the post millennium in the 2000 arena, the changes in music really from the 80s and 90s but when they start looking at the music in 2000 now, they're seeing the same changes that these other scientists who of course they never communicate with each other, they're seeing the same changes in human music as in the song birds.

I'm writing an article called When the Music's Over, looks that article to come out in the next 10 years or so. I'm not an anthropologist and I'm almost writing like an anthropologist and it's a little unnerving and I'm uncomfortable because it's not my area of expertise. It's very interesting so yes the music has changed and there is bad music. AM radio is bad. The music on a radio the new music, there's just a lot of junk out there.

Scott: Interesting. Well, we hope you had fun tonight and we hope that... we're going to turn out and we're ...

Phil: Looking to have a great time.

Scott: Yeah great weather outside. If we wanted to sample some of your music your website, how do we get to it and dive into it?

Phil: Download it. philmaffetone.com is the website. I have all my music there. You can go to any of the music websites, i-Tunes, napster, bodipy. They all have all of my albums and you can get it all there in the stores. If they don't have any of the albums for people who buy CD's these days they're in the stores as well.

Scott: Also the websites have quick access and it makes running easier. You put the right music in soothing music, the right stuff that kind of brings you back to it refocuses me and allows me to get through some of the tougher times and music is an important part of what I do out there.

Phil: Yeah as long as you're not, as long as you're not using the music to rev you up because there are studies that show that if you're listening to music when you work out, your heart rate can be 10 to 15 beats higher and for most people that means you're overtraining.

Scott: Listen to shot A while we're running.

Phil: Well listen to anything you want but watch your heart rate.



Scott: Okay all right we appreciate the guidance in all these different areas and I recommend the big book of health and fitness, the Big Book Of Racing And Endurance ...

Phil: Training and racing.

Scott: I've got the book and there are great downloaded equipment to i-Pads that's how I had access to them and it's very, very good. It's been good for me.

Don: I'm convinced I'm going to go pick one of these up with a [inaudible 01:04:02]

Scott: Trail Runner Nation members, go to trailrunnernation.com. You remember that. We have a group within the website and different groups that form and there's a group called the Maffetonians. They have formed themselves and dedicated themselves to your principles.

Phil: Wonderful.

Scott: I'm sure they will download twice. This is a Phil Maffetone live.

Phil: Download for your friends.

Scott: Yeah one for you one for your friend as a gift. For those who have everything go to at VR Nation Twitter and Facebook. Sure go there too. Go look at a Facebook. We've got some [inaudible 01:04:41] coming up.

Phil: You know by the time this podcast hits the airwaves, we will have drumroll, that's good.

Scott: This is the music. How you play the guitar and yes, I think, we'll have pink, pink [inaudible 01:04:55]. What are you going study. We're putting the hot pink [inaudible 01:04:59] on one runner and a black set on another one and we're just going to see who performs better. We're thinking maybe Mike Morton in black and I'll wear the pink.

Phil: Is that going to be at night or during the day?

Scott: We should get a glow in the dark pink [inaudible 01:05:18] that's nice. That's nice. Go out and run.

Song: And wind up playing something only you can sing

Rosemary, I don't want you bleeding anymore

Don't want to see you falling in my only other door

You can't remember everything you tell me

So find another way to leave relentlessly

Play me a tune

One more tune, Rosemary

Will your life just end because you're outspent

Taking all your strife to heaven's basement

The ice is thin the sun will rise tomorrow

We can win this game that started long ago

Rosemary, I don't want you bleeding anymore

Don't want to see you falling in my only other door

You can't remember everything you tell me.