SNR#03: Brian St. Pierre

Danny: Hey Brian how are you doing man?

Brian: Good Danny thanks for having me.

Danny: Very good, its great to have you on the show, but before we get down into main topics, perhaps you'll just give people a bit of an introduction about yourself, the work you're doing at the moment and kind of a few of your key interests.

Brian: Sure, yeah, I've a bachelors and masters degree in nutrition; I'm also a registered dietician. I used to work at Cressey Performance, that's where I really got my start in this field. I worked under Eric for about 3 years before going back to school for a little bit and then I've been at PN for almost 2 years now where worked as a leading coach for a while and these days I do a lot of different stuff for PN, like I write a lot of content PN articles, I give seminars both public and private, coach our lead

athletes…the elite athlete work that we do I handle that kind of stuff, as well as I like the media outreach podcast, journalists interviews, things of that nature, along with some other internal work at PN, so that's a bit about me, my interests range widely. I have 2 young kids and a wife so I do a lot of family stuff, I'm a big movie guy but I don't get to watch too many of my own movies these days. Lot more Dora the Explorer and Pixar movies…so…

Danny: It's all good. What we want to get in to talk to you about today is this whole area of the confusion I suppose in the nutrition world around carbohydrates at the moment, and first of all most people would have been coming from a diet where they're told to eat and base their diet on starchy carbs and whole grains and then they hear all this conflicting information about its better to go lower carb and reduce the carbohydrate intake, and then people go the other way and kind of become too dogmatic almost that way and there can be several health benefits that we can get from carbohydrates. So for example they could have some thyroid down regulation, their health might be impaired, I think performance might get impaired, especially if you're doing something requiring a lot of glycolatic demand should we say. So if we go right back to the very start and over consumption of carbohydrates in the general population tends to be a big problem, could you maybe just really quickly touch on what are some of the key issue with this?

Brian: Right I mean you figure back when…like in the US when government recommendations came out they really emphasized carbohydrates. Almost to an excessive amount, or maybe definitely to an excessive amount. Carbohydrates are not inherently bad or fattening, but they provide the main source of fuel for the body right, they provide a lot of glucose which can be a good thing especially when you're exercising, but when you have…when they lead to excessive overall calorie intakes that can be a

problem, and for the most part in the general population it's the food choices and the food amounts that are driving the issues. People are consuming a lot of processed foods and carbohydrates which tend to be overly rewarding and basically taste too good, right. They actually fool your brain, trick your brain, because brain inflammation can even change some brain chemistry and make you eat more of these foods you normally would, they're designed that way. They're designed and engineered to drive what's called passive over consumption. Like if you…perfect example, like if you plain popcorn versus if you ate popcorn with some butter and some salt on it, that combination of starch, fat and salt is almost too pleasurable top your brain. So if you sit there and you're watching a movie and you're eating that kind of popcorn you can put down a 1000 calories of it and its not really going to drastically impact your appetite, cause you're satiarty signals, lie when your brain normally gets feedback from your gut, like ok we've got an X amount of proteins and fats or carbs or just overall calories or volume of food, there are a lot of different signals, then they'll tell your brain to, ok we don't need to eat anymore, we're all good. But when you eat foods like that those signals get over ridden, your rain tends to ignore them cause it's so excited by the overly deliciousness of this food. There's more to it than that, that's the really simple version, so that's where we've really run into issues over the past 30 ish years where processed food ahs really come to dominate the market. So the general population, that's where that's a big issues. So this just leads to over consumption overall.

Danny: Yeah and I think then following on from that then a lot of these people that have perhaps been coming form this place of over consumption and then they stumble upon something like a lower carb approach or something like the paleo diet or the primal diet or whatever you want to call it and then they start seeing these great health benefits because they lowered their carb consumption, they're more than likely spontaneously

going to reduce their calorie consumption. They're probably going to be eating better quality foods just by the nature of taking out all of that stuff and sometimes I feel this leads to almost falling into that trap of thinking that carbs are evil or that low carb is the only solution. So perhaps if we leave that elite athlete and we just focus on the general population for the moment and I'll be interested in hearing have you see people maybe you've worked with for example that have a lot carbohydrate diet for a significant period of time where the progress starts to stall, or even regress and they get into problems due to it and so what is actually going on there?

Brian: Absolutely we've seen that. I've personally seen it coaching people or having taken on clients who've already been in that state, maybe they didn't do it while working with me but came to me after progress had stalled, because on a low carb intake, but I've seen clients who were PM clients who took our recommendations and then kind of went with them too far, if only having some carbs around training is good then I'll just only have minimum carbs around training, that will be even better. That will facilitate more fat loss. Then they would lose a lot of weight and then all of a sudden they would hit a wall. After 6 months or whatever the case may be and really what's happening, some of the stuff you mentioned before, you see thyroid, your T3 levels of your thyroid go down, so potentially your metabolism can slow down, you'll see testosterone can be decreased, cortisol will go up, can lead to muscle catabolism, suppressing your immune function, even in people who aren't necessarily elite athletes. If you're exercising 4 – 5 hours a week and you're loosing…you're in a hypocholaric diet, like you're under eating so trying to lose weight in addition to under eating carbs, that might work well in the short term, but in the long term that's what's going to happen. It's going to back fire on you. Even if you're not an elite athlete. If you're an elite athlete it will happen faster. If you're training that much more and

that harder, those results will just happen more rapidly. And they will happen to anybody…maybe not anybody because there are some people who thrive on a low carb diet, but on the whole, on average you will suffer some of those consequences.

Danny: Yeah and I think it's perhaps important that we maybe try and put some sort of parameters here on what we mean by low carbohydrate because from a kind of conventional point of view, where a normal should we say, diet could be anything like 5 – 600 grams of carbs a day. Then really anything below that is going to be low carb, whereas what most people now when they say they're on a low carb diet they're almost close to ketogenic, they're like on a 100 grams or less a day so if people are trying to work out then for themselves where they actually are in terms of their carbs in take and is there any way that they can determine the best optimum intake for them?

Brian: Yeah, basically the way we do it is we have a standard general recommendation that we give to clients. So basically we recommend people consume, like assuming they eat 4 times a day we recommend that men consume about 2 palms of protein, 2 cup pan full of carbs, that could be fruit or starch or grains, things of that nature. 2 fists of vegetables and 2 thumbs of healthy fats with every meal. So a pretty balanced intake. And for women its 1 of everything. 1 palm of protein, 1 fist of vegetables, 1 cup hand full of carbs and 1 thumb of fats. And then you can kind of adjust from there based on body types and then just adjust based on your results. If you feel like you're losing weight too rapidly or you're not recovering form your exercise, where you just feel fatigued and your strength levels are going down or your general performance is going down, you can add things back. You can add a cup handful or a cup tan full of carbs to a few meals here and there and re asses. Assess its effects on your body composition, assess its effects on your performance,

whatever was troubling you, and see how it affects that. If it cleans it up, roll with it, if it doesn't, maybe add a little bit more or maybe you add a bit of some healthy fats, you know to get more calories if that's what's needed. So you have…its just to give you a framework, so we start with the framework and then we help clients adjust form there to personalize to their specific needs. Cause some people do better with less carbs, some do better with more carbs, we think about…in general about 70% of the population will do best on that middle of the road recommendation that I gave, and then there's you know….weight is like a bell curve, 25% will do better with a little bit more, little bit less, that's what we called eating to your body type, people who are say normally leaner will do better with a little bit more carbohydrates. So for men that might be 3 cups handful of carbs and only 1 thumb of fats. For women that might be one and a half cups handful or only 2 cups handfuls and only like a half of a thumb of fat, something along those lines and then there are people that do better with less carbs. So 12.5% on each side of the curve really is how we look at it. And then there are outliers on either end of who are extreme. Like people who really do thrive on what you said, la ketogenic diet, they are out there but they tend to be a really small component of the population, and then there are people who thrive on really high carbohydrate diets, you know, 70% of their calories are form carbs and they are fit and healthy and lean but they are generally people who are endurance athletes or are on really high activity levels. Not always but generally. So they exist but you can't extrapolate their results to the needs of everybody else.

Danny: Sure, and I think that's one of the biggest things that people miss. Its not just a matter of tattering carbohydrates for the amount of training you're doing per se, there's a whole host of things that's going to play into that. So if you even look at people, the amount of for example I think Chris master john talked about this when he talked about the amount of copies certain people have for their amylase gene which is used to break down

carbohydrates, for some that can range from 2 copies to 15 copies. So obviously if you're at either end of that spectrum, you're going to do completely differently on a set amount of carbohydrates regardless of your training or your genetics and so on. So I think what was important that you talked about there was this idea of trying out…have a starting framework, been able to try something out, see how you go and then adjust, because it's not even that there's not one diet for everyone, its not even there's one diet for one person. It's kind of dynamic that it's going to change over time.

Brian: Of course. As your goals change, your needs change, your lifestyle changes, your diet should change as well. Like I don't eat the same way now as I did when I was in college. You know when I was playing rugby and practicing 2 hours a day and lifting 4 times a week, my lifestyle and my activity levels have changed, so my diet reflects that. But you're exactly right; I mean there are many things that impact your carbohydrate needs, your genes, your goals. If your goal is to gain weight, eating more carbohydrates regardless of your activity levels can help that, whereas if your goal is to lose weight, you do have to cut some calories somewhere and you want to keep protein up high to maintain your muscle mass, that's an area to cut, so yeah, it's a reflection of many things but we are big advocates of starting with that middle ground framework and then adjusting from there, versus if you start at and extreme end, how do you know where you really fit? You have to go really far down the continuum to get either direction. So if you start in the middle you can make small adjustments either way and see which direction is working for you at this time.

Danny: Like a definition to me of someone that's in a healthy state metabolically is they're able to shift between using either fat or glucose for energy depending on their circumstances and as their body needs it. So having

this metabolic flexibility, the term that we're often hearing. For that do you think that being able to go through different periods of higher and lower carb or carb cycling is helpful for that, or you find that for most healthy individuals that a steady intake everyday is just as good?

Brian: For most I would say a steady intake everyday is just as good, because it's simpler right? And so the more complexity you add the lower consistency it ends up being. And so when you make things more complex that can run into its own problems. Now for some people, specially who have higher activity levels or who have more extreme goals, carb cycling can be beneficial, but if you are lets say, an office worker and you just exercise 3 – 4 times a week, you just want to fit, and healthy, you need to add a carb cycling in? No I don't think you need to add that level of complexity. A pretty consistent intake on a daily basis will be the way to go. Just like I equate it to…if you're trying to learn to bench-press say 225 pounds, that's a pretty good weight for lot of guys to bench-press, you don't need to do any fancy training protocols to get there, like you know, just adding weight to the bar, progressive overload, when your periodisation will get you there over time for most people. If you're going to learn to bench-press 350 pounds, yeah you're going to need to do some more extreme things. You're going to need to do a combating resistance; maybe do some speed days and heavier lifting days, like there's a lot more to it. But to just get pretty good results, you can keep it pretty simple, to get more extreme results, that's when you need to take it to a more complex situations. But I prefer people keep it as simple as possible for their goals and then only increase complexity if absolutely needed.

Danny: Yeah so the idea of simple and consistent is always going to be better than complex, intermittent in nature, or dis-regular.

Brian: Absolutely. Absolutely.

Danny: So Brian we've talked carbohydrates in absolutely daily intake terms so far, what about how timing of carbohydrates will affect the results, someone may get in different situations. So can we partition carbohydrates in different places throughout the day that may give better results or is it going to be the overall intake that's really going to be the main driver?

Brian: So in terms of nutrient timing, like it being important, my answer is yes and no. total intake is still more important than timing, right, you could have the greatest nutrient timing in the world, but if you're consuming significantly more or significantly less calories than you need, it's irrelevant. So in the hierarchy of needs, total intake is more important, the quality of that intake is more important, and then timing comes in a pretty distant third. But, if you have total intake down and you're getting a really quality sources, and you're being consistent and you want to take it to another level, sure! Timing can definitely help. I generally recommend that people still spread out their intake pretty evenly. Like that framework I gave you. It's going to give you a pretty even intake. But in terms of nutrient timing, the simplest way to do it is just make sure you bookend your session, your training session your workout with those meals. So lets say you eat lunch at 2 o'clock in the afternoon, you training at 3:30, maybe you work a morning shift and then you eat dinner at around 5 – 6 o'clock. So you're getting in some protein and carbs before you train and some proteins and carbs after you train within time frames seen by the literature to be effective, but without having to be crazy about…there's no need to pound down fast digesting carbs immediately after lifting. For most people there can be a time and a place for that, but for the majority of the population being crazy about your nutrient timing is unnecessary and over the top. Now you should still definitely make sure you get in carbohydrates after you train just to help you adapt to and recover form your training. Your body will preferentially store those carbs as glycogen,

utilize the…basically you're boosting insulin to build more muscle, prevent more muscle loss, and cause all kinds of good adaptations to your training. So yes, nutrient timing can be helpful from that stand point but to think that if you just consume carbs after training versus at breakfast is going to make some huge difference in your body composition, I think you're mis understanding the research. It could possibly help but we're talking of very small benefit, so it could be a lot of effort for a very small benefit in terms of body composition. It might be very important for someone who's a body builder and every little bit makes a difference, but for someone, what's the difference between being 11.5% body fat, or 12% body fat. It irrelevant, its going to fluctuate on a daily basis with that amount, so getting that meticulous about your intake for most people probably isn't necessary but you should still make sure you are adequately fueling and recovering from your training if that makes sense.

Danny: Yeah absolutely, and you did mention in there that even before nutrient timing the food quality of the carbohydrates is important.

Brian: Absolutely.

Danny: Could you just maybe mention in for a few people some general rules of thumb that you use in terms of deciding whether something is good quality? Where do you draw the line because lots of people are asking the question, especially now around whole grains, which ones are acceptable which aren't. And is white rice better than brown rice for example, bran and all these different things. So is there some general rules that you go by with clients?

Brian: Yeah I mean I think when it comes to carbohydrates, sources are very important, because sources also help to drive how much you eat, like we talked about earlier with the passive over consumption and things of that

nature. So to me I probably have some broader rules than most but all fruit is a fair game to me, whether its high GI or low GI, it's pretty much irrelevant. So all fruit is fair game, potatoes, sweet potatoes, things like kinua, buck wheat, oats and I'm a big advocate for if possible to go from more sprouted grains. Like (inaudible 19:50) type products, things of that nature, but whole grains can be fine too. People tend to get overly concerned about gluten or potential anti nutrients…there are anti nutrients in all plant foods. There are anti nutrients in broccoli, there are anti nutrients in tea and in chocolate. So do you want to consume excessive amounts of vatic acid for example, no. but unless you're consuming an entire diet of grains, that's not going to happen. So I wouldn't…if you have a pretty balanced intake and if you use that structure I gave at the beginning, that framework, and you use your carb sources appropriately, it's really not much of a concern. Unless you have something like celiac disease, or some kind of gluten intolerance but I'm not opposed to a lot of whole minimally processed sources. Beans, legumes, those are all fair game to me. Then we'll individualize from there, if you don't respond well to beans, ok, beans don't work for you. But I don't make these hard and fast rules that apply to everybody. In terms of the white rice versus brown rice debate…rice is one of those examples where I think it doesn't really make a huge difference. Whether its white or brown the fiber content isn't different, the effects on blood sugar aren't tremendously different. I have…the research doesn't seem to show that brown rice is really significantly better than white rice and anecdotally, I mean, lot of Asian culture have eaten a lot of white rice, without any detriment. So that seems to be less of an issue. In terms of grains I definitely try to steer people away from refined white grains for the most part. They should make a minority of your intake. With whole grains or sprouted grains being your main grain source.

Danny: So do you want to shift gears maybe for a second Brian to look at lead athletes because I know as you said you do a lot of work with these guys and obviously their requirements are going to be slightly different. And perhaps before we even get into what those requirements are, perhaps we'll just go through just like you already touched on earliest, the low carbohydrate diets and what affect that will eventually catch up to them in terms of their performance first of all, and then maybe we'll look at their health after. But in terms of performance, I suppose it's important to clarify what type of athlete we're talking about. generally one that…its going to be very different for someone that's doing long duration effects versus glycolatedly demanding stuff like an MMA fight or someone that's doing something extremely short like power lifting. Sure, that's going to focus more on the (inaudible 22:39) system. So perhaps you could just talk about the different types of athletes that you work with and how that translates to what you have to do with them in terms of carbohydrate intake and glycogen replenishment.

Brian: Sure, if you're working with a power lifter for example, their carbohydrate needs for their performance are not tremendously high. But their carbohydrate needs just to help them maintain body weight or to gain body weight can be very helpful. So it depends on goals as well as like we talked about before, genetics. And activity needs. Their activity needs for carbohydrates are not huge, they're doing a lot of low repetitions, heavy weight, minimal use of system as you said, still they'll do some high volume work, so something we'll definitely utilize to some degree, but not to the same degree like an MMA fighter or some kind of mixed sport athlete who's going to use a lot glucose while they're training and while they're fighting. So their carbohydrates needs will generally be significantly higher. Now they usually get lowered when they cut weight, to make weight, but during training their carbohydrate needs will be quite high. Overall though their carbohydrate needs probably won't even be as

high as like your endurance athletes. Now even though people get the idea that endurance athletes should be using a lot of fat as fuel, yes as a percentage they're using more fat as fuel but on an absolute level they're using more fuel than everybody else. Cause they're activity last for so long. So they're still expending and utilizing a ton of glucose. When you under consume glucose, that's when you bonk right? That's when you hit the wall and problems occur. Even in fat adapted athletes on the whole the research shows that people do better on higher carb diets. Now there are exceptions, there are people who in the research do better on high fat low carb diets but on average when you look at research comparing athletes on high carb versus high fat and endurance sports, the high carb diet wins every single time. It just does. And even in the…there's one example of a trail that they were doing…it wasn't even that long ago, I think they were biking, biking or running, I can't remember of the top of my head. They were biking, and one guy, his time to exhaustion increased tremendously on this high fat diet couple of other people there, their performance dropped off tremendously on the high fat diet. So there were 3 outliers. Like one guy who did unbelievably better, 2 who did unbelievably worse, the rest didn't make an enormous difference, however, so on average it came out that they were pretty equal, a high carb versus high fat, but however the research showed that all participants, regardless whether they improved or decreased had a limited capacity to sprint. So all of them, even the guy who improved tremendously from the high fat diet, their ability to sprint on the high fat diet was lost. Because we know high intense activities like sprinting are more glucose demanding right? They have much higher glucose utilization. So when you don't…when you're body can not provide that glucose, because you're not taking it in from your diet, you don't have glycogen stored, their sprinting capability was gone. So time to exhaustion is great but in an actual race where in the end you're kicking it up a notch to take it to that finish line, the kick in a sprint at the end of a long endurance race, when you lose that ability, that's

drastic. That's not a good thing. So on the whole for endurance athletes I would say a high carb diet is the way to go. There are always exception, there are always going to be some people who do well on a low carb high fat diet in endurance sports, but they are the exception not the rule. So you can't extrapolate the results of one to the needs of many.

Danny: Sure, and I think its really important, and its really interesting that you mentioned that time to exhaustion trial there and one thing that people do tend to forget when they're looking at that type of research is that a lot of these athletes when they're competing and they're going to try and win an event its not a time to exhaustion thing, that's not the goal…

Brian: Right, it's not the longest; it's who can do it the fastest right?

Danny: Exactly, and that's not what's being measured in lot of the research things and its really when you mentioned that inability to reach that sprint, I think that's probably the biggest drawback of these high fat diets for athletes, I think it was Rob Wolf talking about before he messed around with some low carb stuff when he was doing Brazilian jujitsu and it was during the training he was at the last final, the energy was good and he last the duration of the session, it was at higher gear that he couldn't kick in to which is exactly what you were just describing and….

Brian: And I think that's why you're seeing in the paleo movement a shift towards eating more carbohydrates. They limit the sources right, to like safe starches, whatever the case may be, but in the paleo movement which originally was emanated from the low carb high fat movement, just in a different approach, it has become less dogmatic, or as low carb high fat and greater utilization of smart carbohydrate sources cause they're finding in people who are following paleo, some of the same issues that we've talked about with too low of a carb diet.

Danny: Sure and I think that split that you're seeing now is you're seeing these kind of different terms, you have one that used to be the same now you have some of them that are in this LCHF or low carb high fat group, and then the guys that are saying paleo, but that doesn't have any macro nutrient requirements per se, could be low carb could be high carb, could be moderate, so I think that's really important kind of evolution because there are so many good things about paleo and primal, but one of the drawbacks used to be people missing, interpreting it as a low carb diet, so I think that's a good movement for them in general.

Brian: Yeah I think its just learning right. Rob Wolfe is a perfect example, someone who is doing it one way and found it worked in some context but not in another, right, so that's the same exact idea of there's no one perfect diet for everybody, even this one diet for you is not going to work for you at all times id your needs change, so that's a great example.

Danny: Yeah another interesting thing on that area with athletes, there's a lot of researchers over in the UK doing research in this area about athletes who are training on depleted glycogen stores, what that. To get the optimal performance they can get. Training benefits. But once it comes competition time they need to have full glycogen stores and then they have that metabolic flexibility because the training has allowed them to adapt to using high (inaudible 29:29) of fat per se, but again that is no good to them if they're starting an event with lower glycogen, so that's a thing. People mis I think with high fats and diets. If you're an athlete, ok that will help you shift using a lot more fat, but you will still as you said, have to burn through a certain amount of glycogen, and it's the high fat is…the good thing about it is that its glycogen sparing, but not that it will diminish your need for glycogen. So I think that that's an important distinguish that some people tend to miss out on, so it's important that you brought it up Brian.

Brian: Absolutely and I think you're spot on and it's a lot of the times stuff is just taken out of context, or utilized out of context. Well, take research that's using endurance athletes and try to apply it to a power lifter, and those are just 2 different scenarios. So I think you're spot on.

Danny: One final thing that I wanted to talk about in terms of like elite level athletes, and I think its an important point, that necessarily giving them recommendations we have to be aware that their number one goal is performance rather than health, so they are by nature doing a lot of things that are probably a bit detrimental to health and moved a smaller bit away from optimal levels of health, and perhaps the absolute amounts of carbohydrates can be an issue for them but again we have to recognize that performance is the number one goal for those people. So do you tend to think that that is an issue for some that they have to do things nutritionally that you wouldn't have to do if they weren't at that elite level?

Brian: Maybe, I mean I don't think all athletes are in that type of camp, but I think athletes who do extreme sports, like ultra endurance athletes, power lifters for example, specially if you're like a heavy weight power lifter, you are a large man, and to maximize your size and strength, like they don't eat for health, they have a tremendous calorie intake they're composition of choices is not usually ideal, just to have that many calories you can't eat just whole foods, cause they're not calories dense enough, they're too satiating. So you're absolutely right, there are certainly pockets as far as population where they skew more towards performance, and then for "regular" people to apply that, is a problem because it's missing the context. And not all athletes are in that same type of boat. Most mix sport athletes, like hockey or basket ball for example, like their dietary intake is not going to be skewed so strongly towards performance where they're going to negatively impact health or body composition, but there are

plenty of other athletes where you're right, that is the case, so people just need to keep that in mind. Its just like looking at a body builders training program when you're a 15 years old kid and thinking yes, that's the program you should do. Like they're been training for 15 years and they're on enough drugs to kill a small horse, their training protocols are not going to apply to a 15 year old kid who is a 135 pounds. So its context. Context is king, that's really one thing I try to hammer home with people. Just to keep that in mind when you read recommendation from experts or from professional, athletes, what they're doing and their goals are probably not the same as yours.

Danny: I do want to move on just slightly from athletes now back to more…you can consider it more a clinical scenario even, in one of the biggest health issues I see around at the moment is some sort of gut dysfunction or some sort of gut issue and I myself have played around with a lot of low carb, sick of the low carb, ketogenic types of stuff over the last few years, test it out see what it was like, but one of the main concerns that has always been the effect that it may have on the gut. So there has been…I think towards the end of last year there was a research showing that people that were on ketogenic diets didn't have as good a gut by own makeup as those on higher carb intakes. Have you seen any of this stuff in and around carbohydrates and their role in promoting good gut health? And what's actually going on there?

Brian: Absolutely. I actually did my masters thesis on wheat, one of the things that I studies was the fructan component of wheat. Fructan is a type of pre biotic fiber which is what really contributes to GI health. It's the probiotics, the good bacteria in your gut utilized for fuel and when you're not providing fuel substrate they're going to die of. So in a ketogenic diet we are not taking in a lot of carbs and not taking in a lot of fiber, you're not providing your GI track, the hundred, trillion whatever the number is

of bacteria in your gut. There are more bacteria in your gut that there are cells in your body. With the fuel that they need to promote a healthfull environment. So you know, while very low carb ketogenic can help some people, and it's even prescribed to some organizations, like maybe epileptic patients cause they can decrease seizures and things of that nature. For most people it's not ideal for health because that's one perfect example. Right. Where your fiber intake is so low, where your pre biotic intake is so low and it could be other components as well. For example some of the…or a lot of the anti oxidants in wheat for example, are bound to the fiber and so they don't get into your blood stream per se but they get utilized in your GI track. Because the pro bacteria in your gut use that fiber for fuel, they breakdown that fiber and then digest that fiber which releases' those anti oxidants into the GI track to function there. So a lot of anti oxidants don't even get into your blood stream but they work as anti oxidants or anti inflammatory within your GI track itself. We are not consuming carbohydrates or high fiber intake. You're missing out on a lot of that stuff. So there are a lot of elements at play there, but sure, you definitely see that issue and you're seeing research about it as well, so it's an important component that carbohydrate foods provide.

Danny: Yeah absolutely and I think in recent months one of the biggest things in the ancestral health tiberia is this whole thing surrounding resistant starch and all these great benefits people are seeing and its typically people that have been on a low carb diet for some time, so again just like you were saying that they've probably had this problem getting in these beneficial bacteria and pre biotic. And now that they're giving something like resistance starch in the form of potato starch or green bananas people are taking, that its nothing magical per se, that we've known about resistance starch for quite a long time, but its just that because they've been chronically low carb for so long they're just seeing such tremendous

benefits once they start supplementing with something like resistance starch.

Brian: Yeah exactly cause the bacteria in your gut do…we're finding out more and more about the things that they do, the signals that they send to your brain when you eat fiber or resistance starch and they digest it they create small chain fatty acid, like butyrate for example, that provide health benefits. They produce vitamin K in your GI track and without inappropriate fiber intake these similes will die off which can then affect the production of butyrate, the production of vitamin K. it can o all kinds of thi9ngs, inflammation in your GI track. If you have a yeast overgrowth there can be many, many things that can go on, where you're not supplying those bacteria with an appropriate amount of fuel. So you're spot on and what's happening is all of a sudden they're getting good fuel sources so they're seeing health benefits.

Danny: Yeah absolutely and when you see some of the benefits that people are talking about, for example like blood sugar regulation, clear skin, their energies going up, its just really tying back in to really what you just said of just how much an impact the gut bacteria have on everything in the body and just how they really regulate everything rather than just gut issues and GI distress.

Brian: And it's hard to say that those improvements are even just from GI health. Right? I mean just from increasing your carbohydrate intake you could be getting some benefits, let alone the ancillary stuff with those carbohydrate foods. Anti oxidants, vital nutrients, effects on gut bio, it's a holistic thing. People trying to isolate what's doing what, when and where and how. When you look at it more from the big picture view and you zoom out a little bit more, you see that on the whole most people do best with a relatively balanced intake, which is why we have that framework that I

mentioned in the beginning. It gives people a pretty balances framework to start from and then adjust and personalize from there. But without that framework a lot of people start at extreme ends and then they get all kinds of weird things happening and they don't know why.

Danny: And so I just wanted to ask, is there any books or resources that you tend to recommend people to look at? Or is there anything that you've been reading recently that's of particular interest that people might take a look at?

Brian: Yeah I mean we always have good content at the PN site. I actually have an upcoming article about carbs that will be posted soon. And I'm a big fan of Allen Argons research review, he does great work there, especially for someone that either doesn't…isn't able to keep up with research, doesn't really understand how to read research, does a great job breaking down the strengths and weaknesses and what it all actually means. Big fan of his work. Stephan Green the whole healthsource.org. He doesn't blog too much these days but his content is fantastic. He has a very balanced seasoned approach to nutrition and I think he really gets the big picture. So his stuff is fantastic.

Danny: Yeah and especially in and around the area you mentioned earlier, around food palatability and reward and all those things, he's big in that area.

Brian: Yeah right. Absolutely. His stuff is excellent. In terms of books, the book that I've been reading these days haven't been… the fat loss bible by Anthony Calpo, I've been working on that recently, its not an incredibly new book, but I like his approach. He's got again a pretty balanced point of view. Understands the big picture. So I've been working on his book which has been excellent. And then some of the other stuff I've read has been end of over eating, by David Kessler, which is again a book of food

palatability, food reward component, and something's of that nature. So that would probably be a good starting point for some people.

Danny: Excellent yeah, some very good ones in there Brian. So before we wrap up, where should people find you, where can they contact you online, social media and all those sorts of things.

Brian: Yeah, for the most part, and I do have my own website, brianstpierretraining.com, and do have my own Facebook and twitter accounts. Twitter I think is @bspnutrition, but to be completely honest I don't do a ton with that stuff these days, the best place to reach me would be through PN. Like you can see the stuff I provide on the PN website, articles I write, we have a seminar page where we will be giving seminars, you can check that kind of stuff out. its up we're going to kind of modify it, edit it pretty soon, so you can see where JP is giving talks, where I'm giving talks, Krista Scott Dixon and others. In terms of social media we have our Facebook page which I don't do a ton with at PN, but you can check that out. Best way to really follow me is through the general PN site, precisionnutrition.com, and if you want to shoot me an email it's just brian@precisionnutrition.com. As simple as it gets so…

Danny: Perfect, just what we like. So final question and this is one we try and get all our guests to answer, and it's not the easiest one in the world so I'll give you some time. If there is one thing that you could recommend people to do each day that will improve their health, and it doesn't have to be nutrition related, what would it be?

Brian: I would say…I think I can answer this right away, to basically it's about the mindset. Lott of people think they need to have this all or none mindset when it comes to health or performance or nutrition. I have to exercise 6 days a week if I want to look better and feel better and they're

coming from 0 and they want to go to 6. So again I think people just have that all or none mindset. Like they need to start eating perfectly, and change what they drink, and eliminate alcohol, and eliminate caffeine and start eating more protein and less carbs, and they change so many things all at once, cause they have this idea that they need to make these tremendously drastic changes to get results. But in reality you don't need to have that all or none approach. It's ok to still have some of your "vices" as long as they're not excessive. Right? You can enjoy yourself within reason. So it's about consistency. Doing pretty well consistently is going to get people much further than being perfect for a short period of time and then following that up with a big spiral down in the wrong direction. So getting away from that…filling that all or none mindset is necessary cause its not... you don't need perfection, you just need consistency and progress. And it's totally cool to have a glass of wine at dinner every night, have a little dark chocolate, that's ok, as long as it fits with your total intake, right? Everyone's allowed some discretionary calories. And I think it's important for people to realize that they don't need to be perfect, they don't need to change everything all at once, and that slow and steady wins the race.

Danny: I just want to finish off by saying thanks so much for taking the time out to talk to us. It's been an absolutely great show and lots of valuable information for people. So thanks very much for coming on.