



SNR #08: Jose Antonio – Nutrient timing, high-protein diets and supplement myths

Danny: Welcome to episode number 8 of sigma nutrition radio, today we have Doctor Jose Antonio on the line. He is the CEO of international society of sports nutrition and he an assistant professor of exercise physiology at Nova South eastern university in Florida. And on the podcast we're really talking about the 3 big issues in performance nutrition. Nutrient timing, high protein diets and myths in and around supplementation. Specifically creatine and protein. So I won't take too much more time and I'll get straight down to the interview.

Ok, hello and welcome guys to the episode, we're talking sports and performance nutrition and supplementation today and I'm delighted to be joined by José Antonio who is here on the line, José how are you doing?

Jose: I'm doing great Danny, thanks for inviting me on the show, I think we have a lot to talk about and we're going to have a lot of fun doing it, so I appreciate it thank you.

Danny: Absolutely and I think there is a few kind of key topics I really wanted to get down into, so I think lets make the best of this time and straight get into things. One of the big areas I see when I'm discussing performance nutrition with people is this concept of nutrient timing and there's a lot of information starting to come out in around this area. Before we dive too deep into any of this stuff, for anyone that's maybe not too familiar with the term, can you perhaps give a really quick introduction to what we actually mean by this term nutrient timing.

Jose: Yeah you know I think the introduction and I think part of the problem is there's not a universal agreement as to what nutrient timing is, but the way I operationally define nutrient timing is as follows. Nutrient timing involves consuming food, beverages or supplements at specific time points, whether it's around the exercise period or whether its different parts of the day to help exercise performance or to help body composition. So basically it involves...does it matter when I consume stuff, in the broader sense, and certainly the literature on that is quite interesting. So yeah, we are...there's lot on nutrient timing definitely, it's an interesting subject.

Danny: Absolutely, and perhaps one of the most important or interesting thing related to nutrient timing is its potential effect on nutrient partition, so by that we mean its effect on where the nutrients, I mean the acids, the glucose, the fatty acid whatever it may be, where they actually go once we ingest them. What examples are there of how nutrient timing can actually influence nutrient partitioning?

Jose: I think...you're actually talking about a very specific subset of nutrient timing. Some people call it protein timing and there's an idea out there that when you consume protein somewhere around the exercise window and specifically the post exercise window, that seems to be a lot of the bait

here, for instance there's a body of evidence that if you consume something that has proteins pre and or post exercise, it seems to elevate protein synthesis. Now, the problem or the argument against that is folks have said that creating enough protein in general throughout the day, does it matter? And it's a good question and it does put context input nutrient here, so when we just sort of try to encapsulate who it's important for who and who it's not important for. For instance if you're someone who just exercises regularly three times a week, you're not particularly into body building or high performance endurance events then it doesn't matter. I mean if you're just going to the gym 3 times a week, lift a few weights, it doesn't matter if you do nutrient timing strategy, because you don't exercise hard enough. That's sort of a fact of the matter. However, if you're a body builder and your goal is to put on now, it makes perfect sense something pre, during and or post workout. Basically it included part of your meals that you consume throughout the day, if you endurance that and you're training for 2 hours... after riding a bike for 2 hours and running for 90 minutes, you need to get food in your body. Regular food or in the form of protein shake with carbs in it, you need to get it into your body and waiting an hour, waiting 2 hours is cool. Waiting 4 hours would be silly. And in that sense you're basically missing out on one of your meals. I think what people need to ask is this, is there any advantage in doing nothing post workout? So that is no, then this way, eating is never an advantage at all, unless you're proud of yourself, or if you're intermittently constant which is a completely different subject, so if it helps you or has no effect then the strategy is you do it. I mean I see on social media tell you about nutrient timing is a waste of time, blah, blah, blah and they really have it completely back worked. It depends on the population or the type of athlete you are. Depends on your goals, certainly it can help but they never hurt, NO! To me from a purely primate thinking it makes perfect sense that you consume in protein containing shake or food pre post workout. Does it matter if you wait an hour? Oh you know,

if you work out really hard, it doesn't want to wait an hour or 2 hours, so again, I mean, people argue about the sign, that from a purely primate thinking it makes zero sense not to use a nutrient strategy. Now that I sort of given you the I guess the picture as it applies to...and this is what most people tend to talk most about is, using protein for gaining muscle mass. I would say this, that's not...that doesn't encompass all nutrient timing, in fact, you can go back 30 years and endurance athletes have been using nutrient timing strategy forever. Let me give you some examples, taking Caffeine pre workout, that's nutrient timing, I live in Miami Florida, its hotter than hell here, if you run, if you participate in a road race out side, its like 30 degrees Celsius, believe me, consuming water during exercise is better than not consuming water, that we can have. How about you know, Gatorade or power drink, sports drink during exercise will help perform, it makes no sense, after exercise, so that some easy examples of nutrient timing that people seem to forget, where the timing, when you consume something, whether it's a food, beverage or supplement it does critically matter. So the notion that nutrient timing is a dead strategy is baloney, it makes absolutely no sense.

Danny: Yeah I think that's a really important point that people kind of take a step back and see that broader issue of what is actually being discussed because too often it's easy to drill down into things and then almost miss the forest for the trees. And just when you mentioned that post workout anabolic window, I know that, in Oregon and Brad Shaw did a great paper that's in the journal of the ISS and I think it appeared last year, and it basically looked like this whole concept, and there were some really great take aways and I think a lot of those you just touched on José, so we're actually going to dive in to the protein issue a bit later on in the show.

In relation to then, when we're talking about nutrient timing, another one then if we're looking away from protein is obviously with carbohydrates, again another really controversial issue at the moment, and I've talked to

people a lot about this idea of instant manipulation as a term, so basically just there's so much I suppose vilification of elevating instant that we though is bad or evil, but there's obviously several examples of when we elevate instant or spike instant that can actually be beneficial. So what is your kind of thoughts on using nutrient timing to actually effectively make instant work for us rather than against us.

Jose: Let me...I'll answer that I just want to make reference to the paper you eluded to, Aragon and Shaw, yeah it was a very good paper, they wrote on nutrient timing and what's interesting is its probably been the most misunderstood paper that's ever been published in JISSN, a lot of people have misconstrued the paper to think that nutrient timing is a total waste. And even when you look at some of Allan Aragon's writing he had some really good stuff on it, when you put it into the context of the population of which important for, for instance you know if you take running, and that's a easy example cause its easy to qualify running, if you take what I call a jolly jogger who runs maybe 3 times a week for 20 minutes, obviously nutrient timing is a waste of time, but if you take world class athlete who maybe is training twice a day or maybe doing some very good runs, nutrient timing is probably more important, so just getting that context in there is important and I think people tend to forget that, they sort of read it, and like you said, they miss the forest for the trees, and yes there has to be context to it.

Now, getting back to carbohydrates, what's interesting is, really I have never paid attention much to the inflow issue, and carbohydrates as it applies to good performance your body composition here...

Danny: Well maybe we should take both I think, one of the bog areas is obviously body composition cause I know there's a lot of people listening that, that is their main goal, so I think a lot of the talk around instant tends to be in that direction, because like you say, if we're talking pure performance then the

carbohydrates are serving almost a separate issue whereas for body composition we're constantly told if you have higher instant then that's going to have all these detrimental effects from stopping you releasing fat and all this sort of things, so perhaps from the body composition point of view, because that's I think the most misunderstood.

Jose: Ok, the body comp issue is pretty fascinating because if you go back about 10 – 15 years ago, there really wasn't much data doing these so energetic comparisons of diets that had different macro nutrient percentages. But now we have a good you know, dozen studies where they put... And this is where can be studied cause they tend to be in overweight people, but of course who needs a new fat, you don't put lean people on a diet, these diets often tend to be quite hypo energetic, cause they're lower calories, so taken in account, its on over weight or fat people, they tend to be low calorie diet, if you don't think a macro nutrient percentage is a ratio, so lets say they're eating 1500 Kcal diet today, which is low, I mean, I eat that in one meal. What the pattern seems to be is if you're on X amount of carbohydrates, lets say we got 50 grams and put in 50 grams of protein you're basically doing a (inaudible 12:41) switch, the majority of evidence shows that, that by itself will improve body composition, you lose body fat, and gaining body mass even though the calories are the same. And that seems to be the pattern that holds from study to study to study. What's interesting is one of these studies have also published individual data points, and those are the more interesting things, you find that the group averages are different when you look at individual data points the picture is a little fuzzier, because what I've infused is that with a majority of people, if you do a isocorp switch of taking out carbs and putting in protein or even putting in fat, the body composition improves. But it doesn't improve for everybody, there is a subset of people, and I would estimate its about 20%, where a higher carb diet is actually perfectly fine and works well, and again that goes to individual variability and things

like that, but in general it is true that if you want to improve body composition, shifting more of your macro nutrients towards protein and less carb, is an effective strategy for a vast majority of people, but it doesn't work for everybody.

Danny: The most important thing I always try to get people to pay attention to is that there is no one approach that everyone has to take, so again like you're saying, if someone just takes a research paper and looks at the overall conclusions, you can take away what a group did on average, but again its looking at those outliers or even people that are...the individual variation that you talk about is very insightful. On that then if we switch over to performance so training performance or athletic performance, where do you stand on the issue of not only carbohydrate intake but more to do with carbohydrate timing. Is there a best time to use those?

Jose: Ok, carbohydrate intake. First of all let me point there, there are from a performance standpoint, there are very few sports in which skeletal muscle glycogen levels are a limiting factor. Certainly if you do your traditional weight training you'll get a drop in muscle glycogen post weight training, but it's not a limiting factor. Now, is it a limiting factor if you're running a marathon? Is it a limiting factor if you're doing a triathlon, you know, it probably is, its one of several limiting factors, so for the endurance athlete, in terms of carbohydrate intake it takes as long as they can replenish their carbohydrate, their glycogen restores daily, from their diet and post workout nutrition, I think they'll be fine, cause they need the carb load, prior to an event or prior to a race, I think to that I'd say its not necessary as long as they consume some sort of carbohydrate containing beverage during the race, and to (inaudible 15:46) data and consuming a drink during a race or training event, does seem to help performance, so in that case, the timing of it, meaning consuming seems to help quite a bit. But I'm not a big fan of carb loading part of it is people seem really sluggish

cause you get a lot of water weight with it, and its interesting when you look at it from data on carbohydrate loading, and there are actually a few studies where they blind you, participants actually don't know if they're carb loading, they get these artificial sweeteners or something, they found that there's no effect. So it might be people think well, I've been eating a lot of carbs, I better run faster, might be sort of a self fulfilling prophecy, but if you're not carb loading but I definitely want to consume it during an event... down here in south Florida, I participate in sort of an obscure sport, you'll see it in Hawaii or the cohesion islands, its called out rigger paddling or canoeing, where you open ocean races, that last 90 minutes to 2 hours, and interestingly a simple strategy that works for me is one, taking a lot of caffeine in pre workout or pre race, and 2, drinking coca cola during the race, giving myself sugar and caffeine and of course there's water in it and that actually seems to help quite a bit. But to me, I never load up on carbs. Carbs when I'm on a diet.

Danny: So, it seems to be that once we have that related to just provide whatever activity we're doing, just provide ourselves with enough carbohydrates or glucose, whatever the case maybe to get through the event, then there's really no point in thinking that we need to carb load once we have taken into account how much glucose we're actually going to burn through.

Jose: Yeah, and again I think for the vast and short majority of sports, carb loading or carbohydrate intake I think is over blown, in fact, if you look at some of the data coming out of Australia, I think Lewis Burks took initiative on the idea that you should be consuming somewhere between 5 to 10 grams of carbohydrates for 10 grams body weight, and you know what, I made some calculations on myself and like who the hell eats balanced carbs, I mean we eat doughnuts all day, there's no way, and I've done, you know I've collected diet data on some pretty well trained body builders down at Nova Salt university where I teach, and the highest they

ever get with carbs is 3 grams per kilo and they're eating a lot of food, so I'm thinking who consumes 5 – 10 grams of carbs per kilo body weight, I mean that's just (inaudible 18:40) if you're climbing a mountain and you're constantly kind of (inaudible 18:45) and you need calories then maybe it makes sense but then in that case you got to eat a lot of everything, whether its carbs, fats or proteins, but 5 to 10 grams a kilo, I'm like I don't think so.

Danny: Yeah, and again its I suppose back to the same idea of missing the forest for the trees, you can kind of say, well look, these high carb intakes may help performance and they point to all these different reasons why they believe that to be the case. But once you go to those levels, like you're saying unless you're eating a huge amount of food, you by nature have to be taking down the amount of proteins and beneficial fats that you're taking in so again it's a trade of there that you're trying to get one benefit but you're probably loosing out on others, right.

Jose: Yes absolutely. They're straight off the wall, and in fact I think people tend to be quite narrow minded of folks and how they look at eating or diet in general, and I guess as human beings we like to find that one factor that will contribute to whatever it is and enhance performance for better body composition, but the fact of the matter is there's so many factors involved in diet and supplementation and its hard to pin point one factor, I mean who can diet, lets say you're not probably eating a lot of the things each day and lets say I decided to drop my carbs, eat more proteins, well is the effect of that from dropping your carbs or is it from eating more protein? Because if you lessen something, you're eating more of something else, and visa versa. So none of these things happen in isolation, so as long as we realize that with...sometimes we call it single nutrient hypothesis, as long as we realize that we can't look at diet like that

and one nutrient causes all these great things, then I think we'll appreciate the bigger picture a lot more.

Danny: Absolutely. And I do want to just jump back to protein and in specifically high protein diets because again there's a lot of crazy stuff out there on this issue and that's at both extremes, so people being scared almost of high protein intakes whereas others going beyond what's necessary with their intakes and just being a bit over the top with it, so lets just look at the former case first to put this one to bed, cause even a couple of months back we had the whole high protein diets are as bad smoking new stories breaking out, and these are like constantly cropping up from time to time, and I'm sure there'll be another one this time next year again, but just to lay out what is the evidence actually saying regards to high protein diets and health?

Jose: Well you know, that's a good question, but kind of the problem with some of these high protein diets is...and lets see the drawback with any epidemiologic studies, the population based studies in which they statistically group you, the groupings are statistical, they're not biological, that's one problem. The other problem is...and I know it what you're referring to and it made the social media and realm a few months back, what was interesting about that study is they based their dietary data on one 24 hour recall which apparently they thought represented 18 years of dieting, of a diet, which having done some of these studies where we get diet logged every day for 8 weeks, I can assure you doing one day out of 18 years is hardly representative of what someone eats. And then the other things about that study which was kind of funny was that, it seemed to hurt you if you were middle aged, and I don't remember the exact numbers, I want to say like 45 – 55- 60, the thing magically, when you hit 60 or 65, they'll help you. So ok, this is kind of weird, and again, those are not biological distinction, they're statistical distinctions and I think people

sort of forget that. But, in terms of a high protein diet, here's the problem, if you have 10 slices to define high protein, you'll get 10 different (inaudible 22:54)...just to give you an example of what the literature shows, cause I recently published a study on high protein diet diets, actually people eating a lot of protein...I'll get to that a little later, but these are some of the definitions IQ, high protein diet is more than 35%, that's one acute, another one was anything more than the recommended daily allowance, which we all do that I guess, another one is greater than 1.2 grams per kilogram per day. There's so many problems with percentages, like if you say its more than 35% of total takeout, well what if I'm starving to death, what if I'm eating 800 calories a day, well then you're total calories are nothing cause you're not eating anything. The ISSN, we have a physician paper which states roughly you should be eating 1.5 – 2.0 grams per kilo per day. Now me personally, I think 2.0 grams per kilo should be your baseline protein intake, baseline, so anything above that 2.0 grams per kilo I can out rationally define as being high. And then there's not many people unless they're conscious about their protein intake that consume more than 2.0 grams per kilo. Now, what I decided to do last year, actually a couple of my students thought it would be a cool little project if we would...what if we just had a bunch of recreational body builders and have them eat a lot of protein, but not change the way they train. So they lifted the same way, they didn't change their training, so the only thing that changed was they consumed a lot of protein. And this is how much protein they consumed. 4.4 grams per kilo per day. Now I don't know about you, but I tried that, I tried it for a couple of days and I'm like, hell no, I can't eat this much, you literally have to eat all day, and the only way to get so much protein is to drink a lot of protein shake. So 4.4 grams of protein, so 4 grams per day and they were compared to a group that were on a normal diet, and they actually consumed 2 grams per kilo per day, so technically you might say they're both high protein, there's one that's really high protein, and we found

something really interesting. So get this, 8 weeks, they're eating like this everyday, on average they ate...and for those of you who happen to be...or want to be short next June, we're actually presenting this data at the ISSN conference, so I wanted to plug that real quick, but we're presenting the data there, so here's sort of been there yeah, they ate on average roughly 800 more calories a day ,and we're thinking wow, you're opting to get fat on 800 calories a day cause you're not changing your training. Well the interesting thing that happened was that in the high protein group...well in both groups, neither group gained weight, neither group gained fat, neither group gained muscle. Literally eating...only living on protein, if you're not changing the way you train, has no effect on body composition, which tells you couple of things, one, its very hard to get fat eating a lot of protein, that's one, two, eating protein by itself will not put on body mass unless you change the way you train, and those are important pieces of information because people are like, why didn't you have them train harder, well, reason why we didn't have them train harder cause we wanted to see if protein by itself would improve body mass, or increase it, and now we know it does not. There has to be a training to match the protein intake. But it does solve this riddle which I've heard since I was a college student way back then, eating a high protein diet does not make you fat, you don't get fat eating protein, and now, if we over fed them on doughnuts id guarantee you they'd be getting fat, not on protein.

Danny: Absolutely, that's just really interesting stuff, and I will try and link to any of the stuff that you mentioned there, specially to the conference, and just on that study, there's really, really interesting points to take away from that, and for people ,and that actually ties into what I was trying to get to, when we see...

Jose: I think Danny, before you ask me that question, I challenge you to try this 4.4 grams of protein per kilo per day, try it one day, just see...

Danny: I can imagine myself sitting at a table for a full day and force feeding myself, and just chasing it down with protein shakes, doesn't sound too appealing so...I might pass on that, but that's amazing results from that. And just...that actually ties in, we see people that obviously go...not obviously as high as that, but what we would class as high levels of protein and when we look at the kind of research we kind of tend to see there's generally there's this kind of cut off in any of those figures you mentioned, anywhere from 2 to 2.5 grams per kilo gram of body weight, tends to be like almost like a sweet spot for protein intake for people that are doing resistance training or power lifting for example, and so for those people going above that level is it fair to say there's no real benefit and you actually might be taking away from calories you could use towards carbohydrates or fats that might carry out...?

Jose: Weight...that's a good question, I think again... going back to the single nutrient hypothesis, let's say you're training twice a day, let's say you're a football player, not topper but NFL football like in United States where often times you're training twice a day and you got to maintain high degree of body weight, not high amount of body weight, but body mass. The only detriment in consuming that much protein, I haven't seen any issues consuming that much protein, but I guess the question...I would reverse the question, if you're not looking to consume the extra calories of protein, what are you going to consume then? there is only 2 other things left...well 3, carbs, fat, and alcohol, so let's take the alcohol off, so if it's going to be carbs and fat, well then I think one, consuming fat is difficult unless you're drinking oil, or eating a lot of peanut butter or something, so really, if you're not consuming it as protein, would you be better off consuming it as carbs? And you know, I think from the standpoint of just

being able to train all the time, it would be well worth your while to increase the intake of proteins carbs and fat, all of it, if the training volume goes dramatically up, and the example I like to give is training twice a day. Now, the only harm to people if they're consuming 3 grams per kilo protein per day. I don't see any and in fact we're actually doing a follow up study this fall, to see if there's any harmful side effects, liver and kidneys I guess there isn't, because there's cultures that have been consuming high protein diets forever. Will there be any harmful side effects, you know I don't see any, and also I think we should sort of get a way from the idea that the only reason you can eat protein is put on lean body mass. I mean it's not like protein synthesis of other non skeletal muscle tissue, you need it... just normal protein turn over all your organs, your liver, your kidney, your pancreas, your large intestine, your small intestine, your skin, you need protein to make enzymes, protein to make red blood cell, you need protein to make hormones, I mean there's all sort of things that have nothing to do with muscle, yes! For us in the fitness industry all we focus on is muscle when in fact wait a minute, there's a lot of other things proteins does, and to top it off, eating a lot of protein in the long run, is better for your body composition than eating a lot of carbs, I mean, your body composition is a problem then I'd say you're better off eating more proteins than eating more carbs.

Danny: Yeah cool. Nice run down. And I know we're coming slightly up on time so I did want to get in one last topic that I'm serious to hear your thoughts on, and that's around I suppose the myths that are around some supplements that we see and when we look at probably the two most common supplements and definitely the most researched, Creatin and then our humble protein powder, and there seems to be still a lot of just myth and confusion with people that are unsure of these things, you have people telling them that it's dangerous to take these supplements in and I hear this especially in relation to younger athletes, so like here in its

particularly common when people are discussing supplements being taken by young rugby players, and actually last year my buddy James Hamley did a great piece talking about this topic. So what is the actual truth about Creatin first of all, who should be taking it, and is there any of these myths that need to be put to bed.

Jose: All right, well you know I always say you got to practice what you preach, and my kids...I have 2 daughters, I have twin daughters they are turning 14 years old this year, and they've been taking Creatin since they were 6 years old, they are pretty well conditioned athletes, they compete in soft ball here in United states, the data on Creatin use, well the data of Creatin use in adults is incontrovertible, there's no evidence of any side effects, the data on kids is the same thing. There's data on teenage kids who are athletes taking Creatin, data on kids from age of 1 to 18 who have had traumatic brain injury taking Creatin, there's data on kids who've had muscular dystrophy, there's absolutely no reason that you can't give a child a little bit of Creatin, both to help exercise recovery and even help brain function. I mean this data instant that takes high dose Creatin, the idea that it's (inaudible 32:51) to you has no base in science. It like telling people hey if you want to believe in unicorns believe it, I can't convince you they don't exist, same with this. If you want to believe Creatin is going to kill your kids well believe it, because there's no data that I can show you that will convince you because you already have a preconceived opinion that it's bad for you. And you know what's interesting, that's why I often refrain from giving talks to high school parents because they've already decided ahead of time that it's bad for you no matter how much science can show them, so I'm like yeah! You know, forget it, I'm not even going to waste my time. But yeah, the data... I mean we've had hundreds of studies on Creatin, some of it with kids and there's no evidence that it's harmful and I always tell people, would you let your kid eat a lot of fish and they're like yeah! Yeah, well then fish has a lot of Creatin, does that

bother you? Well its fish! That doesn't mean...its Creatin in powder, its Creatin! They get really predictable about it. Its in the protein. They're like, proteins bad for you, I'm like No! Where's the data? Funny, people just make stuff up you know. Its kind of amusing, but at the same time its annoying, its like a mosquito flying around your head, you want to squat it, but its too fast to squat but it still annoys you.

Danny: Absolutely, I just absolutely love that you tells us there, you have your kids since they're 6 they're taking Creatin because I say nearly anytime this question pops up in seminars or talks around this I just say I advice it for everyone. I mean even taking aside any performance aspect like we're saying there, even anti oxidants capacity of Creatin for anyone, they should...its like a no brainer really, just take it. And again I loved that run down, and its interesting when you mentioned the fish, because another common one I say to people is ok if we have a guy that's playing rugby and you're saying don't take Creatin its dangerous but he's eating a lump of red meat twice a day, he's probably getting in around 5 grams of Creatin anyway, so its just like your mind boggles yeah. One other thing before we wrap up José is again on protein and what I hear people asking me a lot, they talk to me about...they've bought protein supplements and they've been told to get whey protein for their post workout because its fast absorbing and then they go and buy a separate supplement, casein protein for their bed time because its slow absorbing so they wont be eating into their muscle. Can you just give us the definitive, does that even matter for most people or is it the total protein intake and just when that's timed that is the central governing issue?

Jose: Yeah I think if you had to rank what's important, I think the thing, the most important thing is the total protein intake, I mean if you're a 300 pound athlete or a 100 kg weight athlete you just need to get enough protein so that's number one. Number 2, the timing does matter, and

certainly just getting it during the workout window is important because that's part of your...you know, how ever many meals you consume. Doesn't matter if its whey or casein, well there's some suggestive data that casein might have sort of an anti catabolic effect when you consume it before going to bed, I mean the data does exist, and also when you do these sort of whey versus casein comparisons in general, when you get muscle protein synthesis it does seem that whey is better than casein, but I think you could make up for it if you give a higher dose, I mean I know it applies whether its whey versus casein, whey versus rice protein, if you consume enough of it, lets say post work out or part of a meal, and you hit what's called the Luten threshold and you're getting at least 2 – 3 grams of Luten for that meal, then I think you'll be fine, however if you're on a low calorie diet and protein quality is important then I'd say its better to stick to the whey.

Danny: Cool, so before we wrap up, I know you mentioned earlier the ISSN conference in clear water beach, so maybe you might just mention that again to people and I also know there's going to be an ISSN conference here in Dublin in August I believe so maybe just give people the details they need on both of those.

Jose: Oh yes absolutely, thank you Danny. The 11th Annual ISSN conference is in clear water beach Florida, June 20 and 21, for those who have not been to Clearwater beach Florida, its one of the most beautiful beaches in Florida, and as you know Florida has some of the best beaches in the world. So if you love sun, the surf and sports nutrition you got to go there. And if you want to register you go to our website, its www.sportsnutritionssociety.org, that's sports nutritionssociety.org, again we have some of the coolest most interesting sports nutrition science and information. Now we're all having a small one day workshop in Ireland, myself and (inaudible 37:50) we're putting together a workshop, the date

is September 20th, and its at the grand hotel and I haven't been in Ireland for several years, so I don't quite remember where it is, but I remember it's a nice hotel. So if you're in Ireland or you're in the Wales or UK or anywhere near, I think you guys are next to each other, so...

Danny: Yeah, everyone just come on over its great.

Jose: Yeah everyone just come to Ireland, and have some good beer, some good food and enjoy some good sports nutrition and training strategies. I wont be there but my colleague Dr. Darren will be who is probably the largest scientist you'll ever meet and Dr. Duncan will be there giving a talk on protein supplements and stuff.

Danny: Yeah and 2 excellent guys as well, and for anyone listening, all those links are on the show notes which you can access on the website page. And Jose I'm going to let you go cause I know we're constraint of time here, finally I'm going to ask really quickly final question I ask everyone if there is just one thing that you could advice people, and it doesn't have to do with anything we've talked about today, just in general life, one thing they can do each day that will improve their health or their life what would you say it would be?

Jose: Well to me I think the one thing they should do each day is sweat a little. They need to get out there and do something, it doesn't matter, its going to the gym, its running, if only you sweat a little everyday, this might be tough in Ireland cause its kind of cold there, but if you're in south Florida its really easy to get a good sweat everyday. You know, get out there and sweat a little and I think in the long run it will make you a hell of a lot healthier.

Danny: Awesome stuff. Ok, José just want to say thank you so much for coming on the show, its been absolute knowledge dropping everywhere, so I'm sure people have got a lot from it and I'm sure I'll chat to you again soon.

Jose: All right thanks Danny, I appreciate it, it was a lot of fun.

