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- S1 00:19 Our next speaker comes all the way from Houston, Texas. Roberta Anding, as you can see in the program, is a registered dietitian to the stars and in to the peewees. And you may not have known this but Roberta had her own radio show in Houston for six years. She brings to us a passionate view about nutrition, and so please join me in welcoming Roberta Anding to the stage.
- S? 00:40 [applause]
- S2 00:42 Thank you. Thank you. Well, howdy.
- S? 00:46 Howdy.
- S2 00:46 Thank you, that was loud enough. I appreciate that. I'm going to give you a little whirlwind tour of the role of sports nutrition in taking care of physically active people. And in this role, I need my teammates, I need exercise physiology, I need sports medicine, I need PTs, I need certified athletic trainers, I need strength and conditioning coaches. And so with that as a backdrop, I'm going to say my career is ultimately about teamwork, and hopefully, that's the experience you will have as well. We're going to divide this up a little bit and talk about what are things that are important to athletes, what do they want out of an experience with a sports nutritionist, and then what are your roles, what is your role in terms of providing evidence-based information.
- S2 01:29 Athletes may not know at the beginning how important fluid is, but living in south Texas in religious heat and humidity, if fluid's not your friend, it will be your enemy if you're under-hydrated, so it becomes important to them. I've not ever had an athlete who's not interested in body composition changes. That's translated into body fat loss, lean weight gain, and I want to be bigger, stronger, faster, and how do I do that, and how do I do that safely and, hopefully, I can convince them, legally.
- S2 02:00 Athletes want a performance edge, and rather than thinking about food, they often times go past food and say, 'Yeah, I know about food, but what's the latest supplement out there?' So, my job is to be that translationalist. I take information that Doctor Crider finds out in the lab, and then I try and say, 'Here's a way you can get this done and here's a product that you might be able to take with, first and foremost, of food-first focus.' What do providers and consumers need to know? First of all, because I take care of children at Texas children - I'm the Director of Sports Nutrition at TCH - is there are certainly developmental differences. An eight-year old is not a fifteen-year old, is not a 25-year old.
- S2 02:46 There's developmental differences, but if I'm a parent walking in the door, they want their son to look like the next LeBron James and he's 12, and he's ten or one in terms of his puberty level which means he's not there yet. But they're looking for, Well does he need growth hormone? Does he need testosterone? And I'm thinking, Dad, he's 12. No, he doesn't need any of that, let's let maturity

get up there. And so, developmental differences are really pretty key. Body composition is something we all need to talk about versus scale weight. If I'm dealing with an elite athlete, I don't care what they weigh; the only time I'm really concerned about their weight is from a hydration standpoint, how much weight did they lose on the field that day, but body composition rules.

S2 03:31

So if you're not really good with calipers and that's what you're going to have at your facility, you better learn. I'm very fortunate that I have other ways of assessing body composition. The type of sport, are you aerobically driven or anaerobically driven? Because not only is that nutritionally important, it's oftentimes personality important. Different people gravitate towards those long-distance races than people who are willing to come up and slam you upside the head.

S2 03:56

The intensity of training is unbelievably important, and in an era where a lot of folks don't want to take my ACSM colleagues' recommendations on physical activity, they think they walk around the block and all of a sudden they should have a glass of chocolate milk to recover, you don't need to recover from a low intensity activity. High intensity activity, you do need to recover from. Nutritional needs - and we're assuming the adequacy of calories, meaning that first and foremost, if you don't have adequate amounts of calories, if you don't have enough gas in the tank, it really doesn't make a whole lot of difference what the composition is unless you've met the needs of that sport. And then, there's certain carbohydrate needs and protein needs. Then also, consumers and providers, like you, want to know about supplements.

S2 04:41

So if we take a look at the lifespan - and this is what makes my job the best in the world - when I'm looking at children and adolescence, hydration needs are important, but they oftentimes have that school challenge. That school challenge is they can't bring a water bottle to their classroom, the water faucet in the hall is broken, and they have difficulty meeting their hydration needs in school. Children are oftentimes concrete thinkers, meaning it's black or it's white. So if you say, 'Please don't drink soda,' that's what you get because you didn't say sweet tea, you didn't say lemonade, you didn't say fruit punch, and you certainly didn't say sports drink. So the reality is, you get what you gave them because they're very concrete thinkers. Teens are interested in supplements, but I'm going to say that's probably not as high as the next level is going to be, and puberty allows for muscular hypertrophy. So when folks who are in the weight room and they're starting to strength train, you're going to see guys that are 14 that are just not far enough along. So they're going to get stronger, they're just not going to get bigger until they get a little bit further along that pubertal scale, and that's often times frustrating. Some of the science is going to suggest those are the individuals that are much more likely to dabble in anabolic steroids because they want to look like the guy who's more physically mature. We've got those issues as well.

S2 06:02

College and professional, they have a lot more flexibility in terms of meeting fluid needs. Hopefully, you get the development of abstract thinking, although sometimes, I'll have players say to me, Just tell me what to do and I'll do it. They don't want the science, they don't want the fluff. It's give me the black or white. Supplements become the norm, so part of my role is I'm the supplement expert, theoretically, at the Houston Texans and the Houston Astros, so they're all sent to me first. So I have to know, not only the science, I have to know the safety.

Bodies are fully developed, and they have the ability to gain strength and have muscular hypertrophy.

S2 06:39 Well certainly, because I'm in partnership with ACSM, their position paper on fluid replacement is the gold standard for me. We actually have that urine color chart that was developed years ago over urinals in all of the facilities. Because I can talk about the color of your urine, but my job is to make sure the athlete knows about that, and so when they get up and go, it's sitting right in front of them. I've had players say to me, "Well you know, if you want me in the three to four range, you got anything darker than an eight? Because I'm a little bit darker than an eight. I've got kind of this motor oil urine going on here." Well, I think I need to send you to sports medicine; little concerned there about rhabdomyolysis. And we actually dip urines, and so if you think my job is glamorous, you can just imagine me in the training room taking urine samples and making sure that I've tried to get them with a urine specific gravity of about 1.020.

S2 07:33 And as a dietitian, it's not just about what you drink, it's also about the fuel that you put in your body. So if I have an athlete who is chronically dry, I might want to give them higher water volume foods. Are they having soups on their menu? Are they having milk? Are they having yogurt? How many servings of fruit and vegetables do they take in in order to get that hydration?

S2 07:53 This is my BOD POD, and I love this equipment. I should actually probably be a rep for this company, because I think it's awesome. We certainly use this on a regular basis in terms of assessing body composition. Here are two examples. This is Seth Payne who played for us 2004, 2005, 6'4", 305 pounds, 37 BMI, and percent body fat in the Bod Pod was 19%. At that point in time, he was the leanest linemen in the NFL. That's really lean for a lineman. I can also now contrast him to Corey Bradford who is our wide receiver, body weight is 196 pounds, percent body fat is 5.2, lean weight is 186. So clearly, both of these men are positionally appropriate -defensive lineman, and as well as a wide receiver. But this is going to make a difference. I have a girl at Rice who is a sprinter came to see me, 5'6", 165 pounds and she said, I'm fat. Put her in the BOD POD, she was 9% and [umenoriac?]. So, I said go home and kiss your parents because you're genetically gifted.

S2 08:55 What type of athlete are you working with, aerobic versus anaerobic athletes? And certainly, for many of you, that's very self-explanatory. The IOC - the international Olympic Committee - came out with their consensus paper on nutrition and sport and they graded carbohydrate recommendations based on intensity. If you're that low intensity skill-based athlete with a large muscle man thick lineman, three to five grams per kilogram of body weight maybe a good place to start. Certainly, when you get to that extreme commitment, you can be up to eight to 12 grams of carbohydrate per day, and that's going to make a difference in the long run.

S2 09:29 What sports are anaerobically driven? These are my two anaerobic athletes. So clearly, they inherited that body type from their daddy, and what are those sports? Well, certainly those are going to be the sports that have a resistance training component. I consider the people that are the 400-meter, the 800-meter basketball players stop and go sports, more my anaerobic. Resistance training and muscle hypertrophy-- so when I say people bigger, stronger, faster,

I'm the food portion of this. I'm not the strength conditioning portion of this.

S2 09:57 Being in my role with adolescence, the Tanner staging makes all the difference in the world. You are considered physically mature when you're a Tanner 5, and certainly this is going to be something that I'm going to get from the sports medicine docs that I work with at Texas Children. One of the barriers I get is women say, I don't want to look like guys and I said, "If you aren't injecting testosterone, that's probably not terribly likely." You can get bigger and stronger, but you're not going to get bulky. Eccentric exercise, and certainly in a very time effective manner, eccentric emphasize in my facilities tends to give us better gains then doing mostly a dominant concentric work. And certainly time under load, how much time someone's spending lifting and lowering weight is important. And what we see at Texas Children's is about 40% of the injuries my docs are seeing are people who are coming from the weight room because they just don't know what they're doing, and so we spend a lot of time talking about that.

S2 10:51 We all now that protein is going to help in terms of muscular development and making more muscle fibers, more muscle tissue. And we can look at the science, and say that the protein requirements for strength-trained athletes are no greater than two grams of protein per kg - a couple of studies saying body builders may benefit from a little bit more. But when we get that down to the nitty gritty and you ask college athletes, what's the protein requirements? 67% said they didn't know; 33% estimated the requirement at 8.7 grams per kg.

S2 11:30 Clearly, we don't want people overconsuming at that level, but it's the job of the sports dietitian to say Let me show you what that means on your plate. Let me help you to get to that. And teaching at Rice, I ask the question, Where does whey protein come from? And I get the health food store, but boy you better get NSF certified products or otherwise, you're going to have a positive drug test. And when I say it comes from milk, it's like Really? It comes from milk? This is milk? I said yes, there is whey and casein protein in milk, and milk is really a food-based version, so I think we got a lot of work to do. The science is there and the science is solid, but the question becomes, What do you put on your plate?

S2 12:10 Intensity determines nutritional need, so if I have someone that is coming to me saying I can't gain any muscle mass. My first job is to go knock on the strength coach's door and say how hard of a worker is this person? And if they say not very hard, they're dropping the weights. They wait while I turn around and they stop lifting. Adding more protein isn't going to give that athlete the desired result, because the intensity is not there to generate lean mass gains.

S2 12:37 Now, when we get into the tradition of sports nutrition - tradition, coaches, religious and cultural beliefs influence nutrition choices. When we're talking about parents and littler kids, parents are oftentimes the ones that are providing nutrition information to their teams, so I'd had a dad say to me, I can't believe you're not recommending the Paleo diet. Why aren't you recommending the Paleo diet to my son who's a distance runner, because I don't want him to get fat. So here's where - this is my message - is everybody eats, so everybody is an expert. But nutrition is more than an opinion, it is a science. So unless we really elevate it to the science level, we're always going to be fighting these battles.

S2 13:23 Supplements may prove useful, but unfortunately, or maybe fortunately,

depending on your perspective, the NCAA, the NFL, and Major League Baseball regulate what can be provided. The only product that is available in an NFL facility is Gatorade, period. Done. We can't provide a multivitamin. We can't provide any of the evidence-based supplements, because the League is saying, Guess what? We're tired of having players have positive drug tests, so here's our solution. Our solution is we're limiting access. So now, I've got players who will go out and pick their own product from vitamin shop, or wherever they're going and oftentimes don't get there.

S2 14:02 Are dietary supplements needed? The science is clear that when things work, they work. These professional organizations have policies in place. NSF Certified for Sport or Informed Choice are verification agencies that will actually test product and make sure that they don't have any banned substance. In fact, if you have your cellphone, get those apps. NSF Certified for Sport, you can get on your app. But just because it's certified doesn't mean it works. So just because something's clean, safe and legal and you're not going to have a positive drug test, doesn't mean it works. The great news is for me food is 100% legal. I don't have to worry about someone having a positive drug test from eating spaghetti. So, the nice thing for me is teaching this as a food-first philosophy really helps athletes to perform better on the field, helps them to recover better, it helps them to protect their immune system, and we get exactly what we're looking for. So, thank you all very much.

S? 14:59 [applause]

S1 15:05 Great job, Roberta.

S2 15:06 Thank you.

S1 15:06 And you can tell it's very popular. I think I've gotten 25 questions for you, but we're not going to answer them all now. Stay with us because we will tell you a solution at the end of the program today about how you can get all your questions answered. If your question is not called out, don't despair. We're coming to you. The first one's from Andrew K. Have you seen a difference in athletes possibly gluten intolerant who consume their carbohydrates from grains versus other sources such as fruits and vegetables?

S2 15:33 Certainly, I do think there are athletes who not only have true overt Celiac disease, but may have gluten sensitivity. To me, it's listening to that athlete, listening to their signs and symptoms. The challenge is we can keep their calorie needs up with other gluten-free options like potatoes and rice and other things that don't have gluten. Fruits and vegetables would be a tough way to get it because the calories are relatively low, so I'd have to go with something a little bit more energy dense, but yes, I'm seeing an increase in athletes who want to reduce gluten in their diet.

S1 16:04 Always changing a little bit, isn't it?

S2 16:05 Always changing.

S1 16:07 This is Joe, A. from James Madison. Anyway, this is always a good way to get your question read. Howdie Roberta. Your presentation was fantastic. How common is the under-appreciation of proper carbohydrate replenishment for anaerobic athletes when compared to protein, and how do you suggest we change this phenomenon?

- S2 16:24 I think that's actually a really good point because when you look at the need to replace glycogen stores, it's oftentimes not their event that gets them. Some run at 400. If you're good, you run another 46 seconds. The energy need there isn't great. It's training that gets you. It's the two hours on the track. And so I think that's the real challenge for all of us, because what we're doing is we're fighting popular press. We're fighting Paleo. We're fighting Atkins. We're fighting all these low carbohydrate diets. I think what oftentimes is the big turning point for an individual athlete is they find out that they do better, they recover quicker, the next practice is infinitely better because they replaced the carbohydrate, but I think that's a real challenge. And again, nutrition is a science and not an opinion, so we need more nutrition scientists preaching the good word.
- S1 17:13 That's always a good message, and along that same line, this question comes from Brian L. What are your views on types of sports drinks marketed to aid recovery, such as Gatorade Recovery, versus natural drinks like chocolate milk? I'm not sure chocolate milk is a natural drink [laughter]. I was on a farm for many years, and we never had any chocolate milk cows [laughter].
- S2 17:35 In that instance, a lot of it depends on who is the athlete. There are a lot of nice commercial beverages that can be used for recovery that have whey protein, that have all the vitamins and minerals. The problem I have is more of an ethical one. I deal with a lot of inner city kids that will spend a disproportionate amount of money on product that they really could have gotten with real food. And so to me, yes, there's some great products out there - Gatorade Recover, MuscleMilk, some of the other products that are out there. My favorite one quite honestly, and I can answer this for most of you all afterwards, is a product with HMB. It's called Ensure Muscle Health. I actually think it's a really good product, but the cost of those is oftentimes my limiting factor in terms of recommending them, because I want people to put real food on the table and not products that are really pretty expensive.
- S1 18:23 And this is this last question, it was really kind of very interesting. I hadn't thought about it this way. From Lucille V., Howdy, from Texas A&M San Antonio. Working with professional athletes, I'm sure you deal with physically fit athletes all the time. Do you also see obesity within the professional ranks?
- S2 18:37 Obesity within the professional ranks as evidenced by BOD POD, and so I look at body composition as position-specific. I don't want a lineman at 5% body fat because they're not going to be able to do their job. One of the things I'm most proud of, because this relates to obesity, is both at Rice University, where I'm the Sports Dietitian there, and the Houston Texans and we'll get it going with the Astros, is when players retire, we have a transition from football program. So, we really focus in on getting their percent body fat down because they're no longer professional athletes. They don't need to sit at 30% body fat any longer, so we really make that transition. Over fat athletes at the professional rank exist, but I have to tell you, they don't last for very long. They don't last for very long, because they're competing against people that are leaner.
- S1 19:27 How many of those transition programs are out there? [crosstalk] That seems like a great service.
- S2 19:29 That's a great question. I don't know. I know a couple of college dietitians that are doing that - Jen Ketterly at Georgia. Other people are doing that nationally to help those athletes who are not moving on to the next level protect their

health, because again, that's what dietitians do.

S1 19:44

Thank you Roberta. Super presentation.

S2 19:44

Thank you. Thank you.

[applause]

[music]