Huffines Sports Medicine Podcast Transcript

Dr. Demark-Wenifried!

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S1 00:02 Welcome to the Sports Medicine Podcast. Brought to you by the Sydney and J.L. Huffines Institute for Sports Medicine and Human Performance in the Department of Health and Kinesiology at Texas A&M University. At the Huffines Institute, we're always working to facilitate, apply, and bring you the most up-to-date coverage of the wide world that is sports medicine and human performance, all in the language you can understand and share with your friends. Now here's our host, the Director of the Huffines Institute, Dr. Tim Lightfoot.

S2 00:32 Hello, and welcome to the weekly edition of the Huffines Institute for Sports Medicine and Human Performance podcast. I'm your host, Tim Lightfoot. I want to thank you all for taking the time to download us and to listen to us today. Our goal is to bring you an interesting individual in the world of sports medicine and human performance every week. I think this week we have really done an admirable job. We have with us in the podcast today, Dr. Wendy Demark-Wahnefried. Welcome to the podcast, Wendy.

S3 01:00 Thank you. It's a pleasure to be here.

S2 01:02 Well, it's a great pleasure to have you here. I think you probably didn't know you were going to be here, until three days ago when you--

S3 01:07 No, an added bonus [laughter].

S2 01:08 An added bonus. I'm going to take a few minutes and tell the audience a little bit about you, and why we're excited that you're here with us. Dr. Demark-Wahnefried is actually a guest here of the Department of Nutrition here, especially Dr. Rod Chapkin. So Dr. Demark-Wahnefried is currently the web chair in Nutritional Sciences at University of Alabama, Birmingham. She has a long list of accomplishments that would take us actually most of the podcast to read, if we were to read it. She has a PhD in Nutritional Science from Syracuse University. Some of her duties at University of Alabama, Birmingham, she is the Associate Director of the UAB Conference of Cancer Center. She is a senior scientist in UAB Center for Aging. She's a senior scientist in UAB Center for Exercise Medicine - and the list goes on and on. I don't know how you have time to do it all. Well, welcome. We're so glad to have you here.

S3 01:59 Thank you.

S2 02:00 Wendy's here, we're going to talk a little bit about her research. She has done a tremendous amount of research focused in cancer, especially with nutrition and exercise. And we'd like to start many of these podcasts with, what got you interested in this area? Did you wake up when you were eight years old and say, "You know what? I'm going to be a cancer dietetics researcher."

S3 02:23 No, I think life has a way of twisting us and turning us into different paths, that we never would have thought we ever would have gone down. So no, there wasn't any particular burning desire. I did have a cancer diagnosis when I was young, but I actually tried to get away from that, rather than it spurring my research career. So after I had my cancer diagnosis, I actually went into cardiovascular care. And I did my initial research in cardiovascular care and nutrition. Some of the early studies on [?]

brand and hypercholesterolemia, like we did when I was at Syracuse University.

S2 03:06 Interesting. What got you interested in the nutrition side of things?

S3 03:10 Nutrition is one of those things-- I was at the University of Michigan and I was in the pre-med program, and it called out to me and so it took me down the road. And then I did my internship down at the Texas Medical Center, and had a really good experience there. And was really going to be a dietitian for the rest of my life. But as life would have it, every year I would train dietetic interns. And sooner or later, I had enough credit at Syracuse University to get a doctorate. Again, life has a way of taking us down interesting paths that we never would have foreseen.

S2 03:51 One of the things that we've talked about with our guests over the years, is that often times to be in this business - when I say business, I mean the business of research, especially the way it is now - really takes a passion. One of the things that I didn't say in your introduction, is that you had multiple millions of dollars and external funding from the national government and a variety of different funding sources. Those things - especially nowadays - are not easy to maintain, easy to keep up. And so you have to have something that drives you to continue this work. What do you see-- we're going to get in to what you work actually is in q few minutes, but what do you-- for those people that are listening that maybe are your students that are thinking about this, what drives you to stay in this business even though it's difficult?

S3 04:34 Well, you make a good point, it is difficult. And I think since this podcast does go out to many thousands of people, I think a lot of that listening audience needs to know how dried up the federal dollars are, and to really make a plea to their congressman to expand the budget, NIH budget, because it really is dire. The medical advancements that we can make now, are so constricted by the amount of funding. So this is really-- we're getting into the dark ages of medicine and the dark ages of medical research, because the NIH dollars are really scaled back. So you make a good point. It's not an easy business and it's hard, very difficult, to be a researcher today. Be that as it may, I think what drives me and what I really have a passion for, is to try to make life better for cancer survivors. And cancer survivors are a growing segment of our population. Right now, they will in 2020, comprise 20 million people throughout the United States. So that segment is growing as more and more baby boomers are living longer and longer. Cancer is a disease of aging, and our treatment is better, screening is better. So more and more people are going to become cancer survivors, and we really do need programs out there, because their needs are much different than any other segment patient population.

S2 06:08 How are their needs different?

S3 06:10 Their needs are different, because their treatment is different. For example, when people get chemotherapy. Chemotherapy not only targets the cancer cells, but it will also target fast-growing cells or cells that have a higher metabolic rate, like muscle. Many cancer patients develop sarcopenic obesity because the chemotherapy starts acting on their muscles, and those really do take a hit while they're under treatment. So trying to build those back up and get people active again.

S2 06:49 It's almost muscle wasting, in many cases--

S3 06:51 Exactly, yeah it is. So their needs are different there. Then we're starting to learn more about metabolic needs. For example, their thyroid hormones or their ability to make various hormones, maybe diminished after that cancer diagnosis. Again, these are areas that we really have to target for future research.

S2 07:16 So a lot of your work is dealt with cancer survivors and those needs, especially with the muscle wasting or the loss of muscle mass. What's the big picture that you've got coming from your research? Tell the audience a little bit about what you're doing from your words, and tell us your findings.

S3 07:32 Well, obesity is a huge issue for cancer survivors, and I sit on various panels that make recommendations for cancer survivors such as The American Cancer Society. They have recommendations for cancer survivors. And what we're trying to do is to think of innovative ways for us to intervene in that population. So what we're trying to do is to find out - one, how energy balance affects the tumor. So if we can - for example, through diet, through exercise - affect the environment that the tumor lives in, maybe what we can do is use diet and exercise as an adjunctive treatment for cancer. So as far as an adjunctive therapy goes, I think we really are at the cusp of learning how we really need to intervene with exercise, how we need to intervene with diet. And there's a lot of strides to be made. So for example, for exercise, - I know you have a huge center here for exercise - as far as the trainers that work with cancer survivors, to get their muscle mass back to where it was at baseline through a lot of strength training exercise, as well as to help them burn off those extra calories because we know that obesity is a poor prognostic factor for cancer. A lot of people don't know that. A lot of people think, "Oh, I'm going to have cancer. I'm going to become wasted, so I better start eating now." Well, that's the exact opposite of what you should do. We know that tumors love to be fed. So they grow like crazy. We have to make a concerted effort not to feed that process.

S3 09:27 A lot of our research efforts now are focused on what is that contribution, can we really stop that cancer cell-- or not stop, perhaps slow it down from growing as fast through diet and exercise, and what regiments are those? The other thing that we're doing, is we just do some general lifestyle things for cancer survivors. Two of the grants that we have right now are gardening interventions. What we do is we pair master gardeners - through the co-operated extension - with a cancer survivor, and the master gardener leads that cancer survivor through a year of gardening. Because I am located at Alabama, much like Texas, it has three growing seasons. I guess it depends on what area of Texas your from. I realize that Texas is a lot bigger than Alabama.

S2 10:19 We have warm, really hot, and hot.

S3 10:21 So the cooperative extension, there are offices everywhere and they're fantastic. And so what we're doing in Alabama, is we're pairing a master gardener with a cancer survivor. Again, leading them through a year of gardening, vegetable gardening, and then launching that cancer survivor, so that they can maintain that garden hopefully for the rest of their life. And what we're finding is that that gardening experience, when we first initiated it, we thought that it would really improve fruit and vegetable consumption, because of course the survivor is growing vegetables in their garden - some fruit. What we're finding is that it not only improves the fruit and vegetable consumption, it improves physical activity. Because once the cancer survivor goes out there and picks their tomato, generally speaking, they [pots?] around in their yard, they decide to go for a walk. So all of a sudden, we're seeing - even though we're not really emphasizing physical activity - they are more physically active. And then as a result of the improved diet and physical activity, their physical functioning improves dramatically, and that's really important for cancer survivors that are 65 and older. Because generally speaking, when a person is diagnosed with cancer and they are 40 years old, they are pretty resilient. They get over it. They get back to where they need

to be. The older you get, the more of a hit you take. A lot of times people that are 65 and older become incapacitated, unable to live independently - and that's when health care cost really do escalate. So for this fairly low-tech intervention, we're seeing huge benefit and so it's really quite exciting.

S2 12:10 It's almost like you're giving them an excuse to go outside. And once they are outside, then they decide, "Well, it's okay. I'll stay and do some other things."

S3 12:15 Yeah, it's kind of a behavioral cue. And then when we're done with our intervention, we leave the cancer survivor with all their equipment, their raised bed or their [?] boxes - whatever we have provided for them during that time of the intervention. So they have that. They can keep on going.

S2 12:31 Do they adhere? Pretty much once your intervention is done, do they continue?

S3 12:36 Surprisingly, yes. All of our patients that have been on this program have, when we ask them, "Okay, are you going to garden, do you plan to garden the next year?" All of them, 100% say yes I'm going to garden, and then 50% of them say, "I'm expanding my garden next year." Another very good metric of our success, is that some of our cancer survivors that have participated in this program, have then enrolled in the cooperative extension to become a master gardener. Because master gardeners, depending upon the state that you live in, will have to go anywhere from 50 hours to 100 hours of training to become a master gardener. And then in order to maintain that certification, at least in our State, they have to donate then 50 hours a year. So we have this self-sustaining program here. It's terrific.

S2 13:32 Well, that's really neat to give them the opportunity to do something like that, which makes them do other-- helps them do other things, I should say. Let's loop back a little bit to the nutritional side of things. We've had several investigators on the podcast: [Mick Doyts?]; [Mary Alenglenn?] actually recently talked about their work with protein - increased protein uptake in cancer patients. Have you all done any work in that? Or what's your take on that whole line or whole work area of their work?

S3 14:01 Yeah, we talked about the sarcopenic obesity here. Cancer survivors do have a protein need of 1.3 to 1.4 grams per kilogram.

S2 14:10 That's generally elevated though over the general populous - what's recommended for protein intake for general population.

S3 14:15 Usually, at 0.8. So it is a little bit higher. Most Americans do consume more protein than they need. So depending upon what kind of diet that you're used to, will really depend on whether that's going to be an increase or a decrease, or it just stays constant. It's an area of investigation.

S2 14:34 One of the things that we've been interested in and we've noticed from your background, you've been doing some flaxseed trials.

S3 14:40 Uh-hum. Yeah.

S2 14:41 Tell us a little about that. Tell the general audience what flaxseed is, where we get it from, and kind of how those outcomes have been.

S3 14:48 Flaxseed is a cold weather crop, it is not grown in Texas. It is grown in Montana and Canada, primarily. The reason why we got interested in it, is that it has a very high lignan content. The lignan content of flaxseed is 800 times more than any other food that we really do know about. And then it also has omega-3 fatty acids, same kind of fatty acids that you would have in fish oil. Except that it's alpha-Linolenic acid,

as opposed to the fatty acids that are in fish. So your body is not where you can really use the fish oil - eicosapentaenoic acid and docosahexaenoic acid - more efficiently, your body has to convert the alpha-Linolenic acid. And for years, it was thought-- well, there's a problem with that. And I have a post [?] her name is Maria [?], she's been doing quite a bit of work in this area and has used the data from our previous trials to really kind of investigate what's happening here. As it turns out, there are some polymorphisms that exists in this metabolic pathway, and some pole can metabolize this alpha-Linolenic acid to a much greater degree than others, and that's - I'm thinking - where the crux of the problem is. For years, flaxseed is controversial, because some studies have suggested that high levels of alpha-Linolenic acid in the diet could be harmful. For example, in the Harvard Newsletter. They put out a Harvard Newsletter, many, many years ago, that suggested that men that have any sort of family history of prostate cancer or that have prostate cancer, that they not consume alpha-Linolenic acid. Because when they started to look at the alpha-Linolenic acid levels in the blood, they found that the men that were predisposed had higher levels. So they kind of connected those two simple dots, and then made this recommendation. As it turns out, as in most things in life, it's not--

S2 16:57 It's not that easy [chuckles].

S3 16:58 It's not that easy, yeah. And so--

S2 17:00 Especially when it relates to science and--

S3 17:02 Yeah. So what we're finding with this new research, is that it isn't that easy. And as it turns out, there are men that are able to metabolize alpha-Linolenic acid. And for those men, they seem to do just fine with level, so they could eat all of the flaxseed and all the walnuts they want. And then for the small subset of men that is comprised of about 10%, from what we've seen in our samples, that there is some problem. And that's probably what the Harvard researchers have uncovered, and unfortunately have made a blanket statement to the whole population. But that--

S2 17:40 Is there a test that someone can take, to find out if they can metabolize flaxseed or not?

S3 17:44 Right now, not commercially available. We've found this out on a research basis. As it turns out, when we look at our men - and the men that participate in our studies, of course - they're scheduled for surgery. So we're able to take a look at their prostates and find out how much alpha-Linolenic acid is in their prostate, as compared to other fatty acids. So we really are having-- again, this is fairly new research. Maria published her article a couple of years ago, and hopefully we will get some funding. We talked about funding earlier in the hour. I really do hope that she's able to secure some funding to find out the answer to this very interesting question. We embarked upon our interest in flaxseed because of it has the lignan - it also has the alpha-Linolenic acid. And we did enough of pre-surgical studies - we did some work in cell culture, we did some work in animal models, and did some small scale pilot studies - and found that the flaxseed was helpful for this man and resulted in a slower tumor growth. Then we did a phase two trial with 161 men, and again found men that got flaxseed - and they were consuming three tablespoons of flax seed a day - the proliferation rate of their tumors was far less than the men that weren't consuming it. Yeah, that was very exciting, except that there was this subset of men that really didn't respond.

S2 19:19 Before we leave that topic, it's not unusual that there are metabolic pathways that work in some people and not others. Maybe people don't know, but it's fairly well-known that most of us could not metabolize lactose in milk until the last what - 8000

years or so, and that has been a genetic change that has happened.

S3 19:38 This is an area where we really do need to find out more. And that's why personalized medicine not only is important for when we're talking about drugs and that sort of thing and making sure that people have the right genetic background in order to take the drug and prove it to be effective, but the same thing goes with diet and exercise as well.

S2 20:01 Well, Wendy, we're running out of time. I feel like we just scratched the surface of all the things that we could talk about. Thank you so much for taking time out of your schedule to be with us today.

S3 20:09 Thank you.

S2 20:10 We've enjoyed it.

S3 20:10 Pleasure to be here.

S2 20:11 As we do with all of our guests at this time, we're going to give you a chance to kind of have the last word. What's your take-on message for anyone listening to this podcast? If they remembered nothing else from this podcast, what would you like them to remember?

S3 20:23 That's a good question. Because I do serve on these guideline panels for cancer survivors, I think it's important to put out the message that what we know if people are cancer survivors, that watching their weight is very important, getting some exercise is very important - 150 minutes a week is what we recommend. Then consuming diets that are fairly low in energy - and so lots of fruits and vegetables, lower in fats and sugars - is kind of the recipe for health.

S2 20:55 Fabulous. Great take-on message. Again, thank you for being here today.

S3 20:58 Thank you.

S2 20:59 I've enjoyed having you here.

S3 21:00 Okay.

S2 21:01 And I'd like to thank all of you for taking the time to download and listen to us today. As regular listeners of the program know, this is the time that we have the Podcast Question of the Week. And here are the Podcast Question of the Week.

S4 21:13 What type of recreational activity was prescribed to cancer survivors to provide health benefits?

S3 21:18 Well, that was a great podcast question, Allen. Send an email to huffinespodcast@hlkn.tamu.edu, and you'll win one of those nifty podcast t-shirts that we have, and don't ever hesitate to send us in the answer if you think you know it. So again, I want to thank our guests, and thank you all for being with us and listening. And we hope you download us next week where we'll have another interesting person from the world of sport's medicine and human performance. And until then, we want you to stay active and healthy.

S1 21:45 The Sports Medicine podcast is produced by [?] [Leitzinger?], and licensed by the Huffines Institute at Texas A&M, under a Creative Commons 3.0 license. You can share it as much as you want and you can talk or blog about it all you want, just don't change it or charge money for it. This podcast is made possible by support from the Omar Smith family and the Sydney and J.L. Huffines family. Our music was composed,

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[silence]