Exercise Oncology Programs in Prostate Cancer Treatment Transcript

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Introduction and Dr. Harnessu2019s Background

Hey, welcome, everyone, to the prostate cancer Summit. I'm your host, Dr. Geo Espinosa, and it is a lot of pleasure that I introduce you to my friend Dr.

Jay Harness. Dr. Harness has an extensive background in oncology. He studied at the University of Michigan. Then while he was faculty there, focused on breast cancer, then went on to Tufts University and then, did more extended his work on breast cancer.

Then he worked he was part of the University of California medical system, as a, as a faculty and member there. And then something happened that he, retired from his clinical work and decided to focus pretty much 100% of his research around exercise oncology, which I want you to go to his Cancer fitness.org website, because you're going to get a lot of information there.

I know, Jay, because, I'm part of his newsletter on exercise oncology that he emails quite a few people. And, all he does is, you know, gives us, informs us of the latest and greatest research around exercise oncology.

Doctor Jay Harness, thank you so much for being on this summit. Oh, Geo. Espinosa, it's really my privilege and what you're doing. And to be part of your summit is a real privilege on my part, as you've shared with your audience.

I'm not a urologist. I've not been in the world of prostate cancer. But I am somebody who is at high risk for prostate cancer because my dad had it, his brother and one other cousin.

So I'm really tuned into your world, and it's really a privilege to be part of your summit, sir. I appreciate it. Jay. The first question that I have to ask is why you had an extensive career.

I think you mentioned prior to us recording since the early 80s, you retired from clinical work four years ago. You could have easily just been on the, you know, somewhere by a beach or golfing and say, well, you know what?

You know, I'm done with everything. I'm just going to enjoy my life. But but that's not what happened. You got into exercise oncology along with experts and faculty members, of this researchers on this particular topic from around the world.

Why did you choose to do this? Was it for your own interest? Was it so you can apply for yourself? Was it so that you can help other people and educate? Why?

Well all right. Sure. Fair enough. Question. Are you familiar with the blue zone communities? Yes, I am I and hopefully most of your audience is to. These are people who live well into their 90s on a consistent basis.

And there's a lot of factors that go into why why they have that kind of survivability. But one of them, Geo is a part of that is having purpose to being excited each day when you get up.

And as I and then people have said, there are no accidents in the universe.

Why Exercise Oncology Matters

So when I first got involved with this area about six years ago, it just touched something in me that hit my passion zone. And I said, wait a minute, why?

As a surgical oncologist with over 40 years of practice, did I not know about this science that's been out there and

being developed, being developed over the last 35 years?

And holy smokes, people need to know about this. And I've always been a passionate guy in the world of breast cancer. I had a site called Breast Cancer answers.com, which was an all video social media site with videos to educate people, and it just touched me that my colleagues, your colleagues and my colleagues, medical oncology, radiation oncology, surgical oncology, and the general public really needed to know more about exercise and the hard science behind it.

Now, you and I know that everybody knows that we should all be exercising, right? Our mothers told us that. Our fathers told us that everybody's so sad through the years and we don't.

You know what the percentage of Americans that exercise regularly in this country is? You ought to take a guess what? That number is my grade. I'm afraid to guess, but I know it's not high.

Yeah, it it's reported to be around 20 to 22%. And the actual national standard for exercise that I have to learn is five days a week of aerobic exercise walking.

And we're not talking about training for a marathon. So we're talking about Areva and mini marathons. We're talking about walking briskly five days a week.

You get our heart rate up around 100, a little bit better for about 30 minutes. In other words, about 150 minutes a week of that kind of aerobic exercise.

And then combining that with 2 to 3 days a week of some resistance training. And during the pandemic, we learned that this could really be done very effectively at home with resistance bands or cans or fruit or other sorts of things.

And those folks in the United States that run exercise oncology programs during the pandemic had to switch from on site to doing virtual. And given that the average cancer patients in their early 60s often could, we even teach people how to do this at home over zoom, like you and I are doing?

And what emerged out of the pandemic was that indeed, we could do this and we could get people going, but, the groups that I'm involved with, Bam, Pulmonary Cancer Alliance, we've got about 65 sites in the United States where we're active and and we've got a database on over 12,000 patients.

When we ask those patients if they exercise regularly before their diagnosis of cancer, you want to take a guess what that number is like before their diet, their cancer diagnosis, before.

In other words, are you Mrs. Jones, exercising regularly, and if so, how much before you're diagnosis of breast cancer? There again, is it less than 20%?

Yep. And maple tree of over 12,000 patients. That averages around 14%. Wow. Yeah. And as you know, and one of the things that's in your world of prostate cancer is lifestyle. Yeah.

And we know that our sedentary lifestyles, our being overweight, the stuff we're consuming all of this stuff together is probably. Implicated in our increasing development of prostate cancer and breast cancer.

In fact, the World Health Organization estimates that in the next two decades, the incidence of cancer worldwide is going to go up. Well over 50% of what it is now, and probably related to those lifestyle factors we just talked about.

You know, Jay, I'm sort of excited that for many reasons that you're here with me. One is because, again, your, your, your passion, for exercise oncology.

The other is because you're actually a breast cancer expert. And you would say, well, what does breast cancer have to do with prostate, prostate cancer and breast cancers are like cousins.

In fact, I often times when there's not enough research on prostate cancer on a specific topic, whether it's exercise or a dietary supplement, I look for breast cancer to see if there's if that research exists there and maybe is applicable because I'm in the trenches clinically, my patients need answers, and I have to look at out of the box and I have to try things.

And so sometimes I get some of that information from the breast cancer literature, so that, so, so that I can apply it in, in prostate cancer. So the fact that you, you know, your expertise is primarily in breast cancer is actually great.

And, you know, on this summit, well, it ends up that you hit the nail right on the head because it ends up of the 5000 publications that have been unfortunate, I primarily go in the exercise physiology literature, the kinesiology literature, believe it or not, even in the sports medicine literature.

But of those 5000 publications, about 70% of the research that's gone into those publications. Guess what? It's come from the world of breast cancer. Yeah, because the breast cancer patients have been so acceptable, participate in the over 2600 prospect of clinical trials that started way back in 1990.

And now, as I said, are over 2600 of those clinical trials. So you're you're absolutely right. They are cousins. The applicability and is is there no question about it.

Jay we could still for for a minute here just talk in general, because about, you know, about, you know, whatever amount like 60 or 70% of cancer is Kanter.

Then you have individual, elements to different types of cancer. But the fact remains that these are cells that are misbehaving, that don't die off, that are spreading rapidly, and then they'll spread and cause other problems somewhere else.

And that's exactly what we try. We're trying to make a, a, a a, a what I would call a toxic cancer tumor microenvironment.

Exercise, Cancer Biology, and Immunotherapy

How do we create this toxic microenvironment around these tumors? In my mind and in my work, one of the pillars is exercise. Yep. But how why at at this and also and let me preface by saying this, you know, I'm, I'm faculty at NYU.

Before then I trained at Columbia University Department of Urology. All I did was holistic and urology health and learn the medical things as well. A for a while I almost had to say, because I wanted to be very careful with what I say because we're, evidence based.

Well, exercise may help with your over quality of life after a prostate cancer diagnosis. Then I was more brave to say, well, exercise will help, not may will help.

Based on the evidence that exists with lowering your mortality and your quality of life after a prostate cancer diagnosis and prostate cancer treatment.

Now, after 20 years, actually saying, wait a minute, there's actually anti-cancer benefits from exercise. Yeah. It's not just improving the overall quality of life there.

There may be actually medicinal and therapeutic anti-cancer benefits from exercise. So am I wrong? And if not, can you expand on that based on what you know?

First of all, you're not wrong. Go at all. Second of all of these 5000 publications that I've talked about, those were mainly clinical outcomes. You know, you had groups of exercise, non exercise, what happened to them, etc..

What's been emerging over the last five years or more is now getting down to the molecular level. lot of these

studies that are again in scientific literature, not on the years of literature, have been looking at rat studies as an example.

Okay. What kind of factors are released when rats are exercising at a certain dose level and whatever? And so we have a thing called mild kinds. You and I are used to talking about cytokines that have a negative effect.

Well, there's a thing called myo kinds that are being released that have popped by muscle with exercise. Every time we exercise, myo kinds are released.

Now we've got the scientific studies going on. What is the impact of those Myo Kimes on on cancer cell lines. And so a lot of these cancer cell lines, of course, are put in rats initially versus the human studies, etc..

There's fascinating work and another person you're going to want to interview, is going to be the group are the group, I should say, is going to be the group.

John of the University of Arizona, where we're looking at the impact of exercise. Again, a lot of this has been done in rats and starting in people on the release of true 200 necrosis factors.

And I, wrote factors that go again that come out of the immune system that are beneficial to boosting the immune system. So I can get you that information of folks you'll want to interview there.

When we think about the future treatment of cancer, it's going to involve immunotherapies. And one of the things I'm sure people ask you all the time is, wait a minute, why does my body not recognize my prostate cancer is not me?

Why is, why are those cells going into my bones or elsewhere in my body and potentially killing me and then, conversely, what can we do to get the body to recognize those malignant cancer cells as non-self and to destroy them?

So there's a whole huge amount of research going on in immunotherapies. Well guess what. What of the immunotherapies could be enhanced by the exercise of our cancer?

Patients before and with the immunotherapies. That is what sounds that sounds amazing. Absolutely. Yeah. So the good news is that while we've got all these clinical outcomes, quality of life and cardiovascular endurance, feeling more positive and less anxiety and less depression, we're now finally getting down to the molecular level of what?

What the heck is going on? To answer the pivotal question you just asked me a minute ago. Okay, so maybe these are these mild kinds have some anti-cancer abilities that are produced by the muscle only when exercised.

Yeah, maybe the immune system. Right. Because people. We need to be more clear. And when I say we, I say all of us that are have a platform of any kind because we use lose terms.

Well, let's once then do immune system. Well, what does that really mean? What that means in my mind. And still in layman's terms. But yeah, your your immune cells need to look at these cells that are not you and cancer cells are not.

You say that doesn't look right. So first of all look at it signal to the immune system that's that doesn't look right. Because if there's no signal there that the immune cells are not going to recognize it as a, as a, as a foreign invader.

And then it has to say, let me get rid of that cell there. Still, we need to get rid of that cell. So there's a couple of steps to make that happen. You're also saying or implying exercise can help with that.

And maybe when you combine that with immunotherapies that are, coming about then that combination may be, synergistic. You got it. That's what I am saying.

So when we think about monoclonal therapies or we think about creating vaccines like we did during the Covid pandemic, a lot of the groups that that did that were also working on cancer.

How do we take the cancer cells? How do we treat the cancer cells in a way that normal immune cells will recognize and kill the cancer cells, and then how can we further enhance that process?

And that's exactly what's going on now. And the person I'll put you in touch with is Doctor Richard Simpson, who's leading this effort at the University of Arizona.

And I'll, make sure that you've got his contact information. He goes by Ricky is a really dynamic Scotsman. It's from Scotland originally. I just did a webinar with him recently, and he's got some research that your group is going to be so excited about, about as we exercise what's been released, the enhancement of the immune system and other things.

And then how can we then couple that with the immunotherapies that are arising.

Exercise Research in Prostate Cancer

Okay. Beautiful, beautiful. All right. Well let's take a deeper dive if we can, J, into prostate cancer. As you can imagine, I'm, you know, I try to stay abreast to the literature there, as it relates to prostate cancer, because that is the the world I live in.

And, what can you tell us in terms of what the research suggests, in relation to, to prostate cancer and exercise? Well, it's all the positive things that we talked about a few minutes ago in the world of, breast cancer, quality of life, cardiovascular endurance, one of the biggest things that you alluded to is the reduction of all cause mortality.

Yeah. Now, many people may not know what we mean by all cause mortality, in other words, dying from things other than your cancer. Yeah. And what's the number one cardiovascular disease.

But but by the way, let's pause there for a second, Jay, because. Yeah, right. So you you get the oh my god. Oh. The oh you know, we don't I don't, not, you know, I don't want to use it profanity.

But the OSHA hit moment when it's like, oh, I got diagnosed with my goodness. Many times patients come in and they have low risk prostate cancer. And then we need to reframe the whole thing.

I said, listen, you are unlikely to die from prostate cancer, but you can die from and you have a strong family history of Alzheimer's disease. You have a family.

Is your heart, you know, cardiovascular disease. So it's very important for people to understand that. Don't lose sight of the bigger picture. Yes. You want to, not die from prostate cancer, but as best as I know, no one wants to die from anything prematurely.

Not just prostate cancer. Yeah. So the big number and you're in New York City, I believe I and, Lee Jones's lab is right there at Sloan Memorial, and, he's in fact, I'll talk about one of his publications in a minute.

And when he's done long longitudinal studies on survivability from all cancers, the big number that leaps off of his reports are that somewhere between 30 to 40% improvement in all cause mortality, no matter what the cancer is amazing.

You know, certain cancers like breast cancer, the exercise does impact lowering recurrence rates does impact, improving survival. But the biggest number out of all this is around 40% improvement in all cause mortality.

And so if we can say anything to our prostate cancer patients is quit sitting, get moving. Okay. Yeah. All right. So one of the papers that I wanted to talk about, and I showed my PowerPoint slides that came out about three years ago from care from Kerry, Kearney up in Alberta, Canada is the effects of exercise on our cardiovascular fitness

and the bio, chemical progression in men with localized prostate cancer under active surveillance.

Beautiful. Let me ask you a geo. How big a group do you think that is these days? Because, it's a pretty sizable group, isn't it, in this day and age?

Absolutely. In Canada, Larry Klotz is one of the leaders. He's a urologist, urologic oncologist, who's done much of the research for over 20 years of active surveillance.

So it's becoming more and more, that population is growing. And in this summit, we have Howard Wollensky, who's been, he's interviewed. He's an active surveillance patient for over, I want to say over a decade, maybe 15 years.

And he has his newsletter called Active Surveillance. So active surveillance is a very important, part of this conversation. Yeah. So Kerry is reported in his group from Alberta is really important.

So what they did was they created, high end, high intensity interval training programs not only to improve cardiovascular fitness, but to see if they could delay the biochemical progression of prostate cancer.

And this was, trial reported in, in Jama oncology about, three years ago out of a group of 52 people, who had 12 weeks of high intensity, training. And it absolutely improved their peak oxygen consumption.

But here's the key thing. It decreased prostatic specific antigen levels, decreased prostate specific antigen velocity compared to people who didn't exercise.

And it's a cellular level that you and I were talking about a minute ago. There were cell lines of, I'm not familiar with these cell lines landscape so far as, say, cancer cell lines, where it inhibited the growth of the cell lines.

Okay, J, I'm familiar with that paper I presented in every presentation where I'm talking about prostate cancer and here's let me let me take it a step further to make it even easier for the audience to understand here.

Thank you for highlighting that. What they did was a group. And what what that paper allows me to do is be more prescriptive with the type of exercise that I'm suggesting to patients.

This was a very specific type of exercise. This was high interval intensity training or called it what they did is that the group that did the hit, they did, they let's say on a treadmill, they went really hard.

Yep. Hard for I believe 30 to 60s more or less. Yep. Then they slowed down for two minutes and they did that. That going hard, slowing down. Scenario.

They did that, 5 to 8 times. That's all they did. Yep. That's called hit compared to a group that did not do here or did not do anything. They do whatever they did, they took out.

They drew the blood from these two groups and they they poured the blood, the serum, the blood in, in a dish full of prostate cancer cells. So they had they poured the blood in the placebo group.

Then they poured the blood in the group that did the hit. And it was actually regression of cancer cells. That's right. That's right. In the group that did hit versus the group that didn't do anything.

Folks that that right there J that was the moment. It might have been three years ago when this paper was published, when I started saying, hey, there's anti-cancer benefits from lifestyle and certainly cancer.

So so yeah. So amazing. Thank you for highlighting that. Yeah. Oh you're welcome. And that takes us right back to what you and I were talking about a couple minutes ago.

There are things going on at the molecular level that we're now just starting to unravel. Joe. And even though you just sort of poured it on a bunch of cells and a whole bunch or inhibited, what we want to know is what are we

pouring on the cells?

So it's doing the inhibition. Okay. Correct. That's right. What what's happening? Why is the maybe some of these machines right. What are the chemicals that are causing the regression of cancer cells.

Yeah. And that's the work that's actively going on. And every year I predict as you do your summit, you're going to have people who are going to be able to add to this literature and, and reinforce what you've known intuitively for some time.

Well, that the Hip study then really leads us to the paper that I remember sharing with you, and you contacted me after I shared this paper and said, Jane, would you maybe be available for our summit?

And that's Lee Jones's paper that came out in July of this year on what's called neoadjuvant exercise therapy and prostate cancer. It was a phase one trial. Yeah.

And what and and so part of okay let me stop for a second. We say to somebody, Mr. Jones you need chemotherapy. We don't say you need chemotherapy. We say you need chemotherapy at the following dose.

Right. So what is the dose of exercise. Yeah. That then enhances the things that you and I are talking about. And that was part of the design of Lee Jones's trial in the paper that I remember sharing with you.

And you contacted me afterwards and, and there was some criticism of the trial that it was underpowered and a bunch of other things. But what came out of it? What?

I thought this trial was really interesting. They took, you know, 53 sedentary patients with localized prostate cancer scheduled for prostatectomy, and they enrolled them in this trial.

Now, let me just stop right there and say whether there's a positive effect or not. If you're going to undergo a robotic process, talk to me. You want to physically be in the best shape you can to get through the surgery, no matter what may be going on at the cellular level.

Right? That's right. Yeah. So we need to be advocating more and more what we call rehab for patients who are going to undergo prostate or cancer surgery or other rectal cancer surgeries or others as a way of trying to get folks physically in better condition physically for for the surgery.

And in this particular trial from Lee Jones, they had escalating numbers of minutes and intensities and what have you. And sort of the bottom line that came out of that is that of all the intensities they chose, they were having impact on lowering to 67 here, and 67 is how rapidly cells reproduce.

Future of Exercise Oncology and Patient Advocacy

And they also were able to measure that PSA levels, were being decreased as well. Well they said, hey, if we've got to do future trials, it appears a 225 minutes per week or 45 minutes, a day for five days a week would be the recommended dose that they would recommend as having a positive impact from a neoadjuvant perspective, an upfront perspective.

So to sort of highlight our discussion about exercise, it's not only when you're just diagnosed because we can have an impact even before your therapy start.

We can have an impact during your therapies. And really big league, we can have an impact on long term survival if we can keep people exercising. Okay, great. If you and I, if you and I were to bottle exercise and pattern it, how wealthy would we be?

Well, we would be very healthy, you know. Are you going to turn wealthy and wealthy? Yeah. Well, exercise was a pill. We'd all be taking 2 or 3 a day.

Wouldn't weigh up. It would be $1 trillion drug. You get so much bang for your buck, not to mention so I mean, we can go on and on, right? Not to mention, and men who are on androgen deprivation therapy who also do well with exercise, in advanced prostate cancer, they do better mentally.

Yep. In terms of how they feel and how they feel about themselves. So there's a psychological benefit cycle. So it's cycle therapeutic. This physiological for cancer lowers the risk of cardiovascular disease, diabetes, all these.

So what's the future for us. And exercise oncology. Where are we headed with this? We're heading into. Well, I put it this way. We're out in the Himalayas.

We've done part of our ascent. We look up and we see the summit, and we're about to ascend to the summit. That's right, that's right. Okay. Yeah. Because the science or the science is going to really support all this.

And once you and I as educators, because that's what you and I do, we get the word out, we get reimbursement that we know that we need. It will be it will be so logical that people say, why is it taking us this long to visualize and get to the summit and one of the things we have to do is to really give a big pat on the back to our PhD researchers and kinesiology, exercise physiology and sports medicine for slugging it out.

For the last 30 plus years, this has been a grind for them, but there is huge light at the end of the tunnel for all of us. Kudos. Kudos to them. Jay. You mentioned something.

You touched on something now called. You said reimbursement. Isn't that part of the issue? So why would a physician talk about exercise if they're not getting paid for it?

How long have you got, under? Well, unfortunately, you know, you and I know that, unfortunately, reimbursement for hospitals, health systems, us physicians, natural past.

Everybody in there, brother. Unfortunately, we need to really advocate for DOA. And it's really sort of a sad thing, you know? But the good news is, we do have groups out there, like Live Strong in the wise.

We've got the dragon boat rowing groups, we've got the others who have gotten all this that do set up free programs. Again, the two components of the exercise programs will be medical center at the time of the diagnosis.

During treatment, immediately post and then the long term survivorship. And we're in the process of getting the fitness community involved in the whole effort when it comes to the long term survivorship.

So as you and I talked, I think before we started the broadcast, the two biggest barriers of full implementation of this are education not only of patients but of also our colleagues and reimbursement.

And they're both happening. They're both coming and they are both going to occur. No question about it I love it I love it. Doctor Jay Harness. Thank you.

I think that that's certainly plenty for for today and our purpose in this summit. Thank you for highlighting the studies because, you know, people again, exercise for a long time has been more like window dressing.

Right. Well, it's a good thing to do. You know, you live healthier if you exercise. And what we're saying here is that wait time out here, it's part of the therapy.

There's medicinal properties to exercise. And this is and there's we could even be based on the research that you highlighted, we could be prescriptive.

Yeah. So thank you for that final words. And how can people find your work. Well I would ask them to please come to www.cancerfit@org and and take a look at our site is an educational tool that are ways at the site to communicate with us.

I would really highlight that as a, as a good way. I would also encourage patients to really get on their doctor's cases. What if they know the literature?

Nothing like embarrassing your physicians by coming in there fully armed and saying, hey, do you know the literature about this? And they get a blank stare back.

None of us in health care like to be embarrassed that way by empowered patients do it so that many others are empowered. And I think that's great advice.

And that will hopefully what it does not something negative where they try to, you know, outdo the doctor but perhaps, influence a doctor. Yeah. Well, you know, this as opposed to saying, it doesn't matter.

It doesn't matter how much exercise doesn't matter here or things that are just, you know, it could be it could even be malpractice at this point to say exercise is and, well, I will tell you, because you've really got a good point here.

When I've talked to my medical oncologist about this, they'll say, oh, well, that's a weight reduction program, right? Oh, it's way more than that. Right.

And I will tell you, you know, if we had this much science for a new surgical procedure for cancer or a new chemotherapy or a new form of radiation therapy, if we had this much science, it would be the standard of what do we do with exercise?

It would already be a standard of care. Just one final caveat. In Australia, exercise oncology is already a standard of adjunctive care for all. Cancer patients and those of us in the field.

That's our goal to try and say the same thing happened not only in the US, but globally as well. Lovely lovely cancerfitness.org. Yes, sir. And thank you for the privilege of being with you today.

And look forward to our ongoing relationship. Look forward to it as well. Jay, thanks so much. Thanks for the work you do. Thank you, everyone, for watching this, fitness, episode on exercise oncology as we release a prostate cancer.

Doctor Jay Harness, of course, was amazing, amazing, enlightening. And there's just more to come. Then hopefully a summit is, valuable to you and giving you all the information and arming you with information to stay knowledgeable, but also act on that knowledge and even perhaps have better conversations with your physicians.

This is Doctor Geo Espinosa from the Prostate Cancer Summit. Signing off. I'll see you at the next one. Keep it rolling. Much love.