CANCER SURVIVORS SYMPOSIA SERIES
*Issues & Solutions for Life After Cancer*

# *Living Your Best after Cancer: Expert Advice on Healthy Lifestyle Choices for Survivors*

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## ***Being Physically Active as a Cancer Survivor***

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Good evening. I'm Dr. Diane Baer Wilson and I'm delighted to be here with you all tonight, and to see so many of you in the audience for our first Cancer Survivors Symposia. Tonight I'm going to talk to you about one of the areas that we consider the positive aspects of cancer survivorship. When we look at risk factors, sometimes what we see are things that are contributing to cancer risks in a negative way. But one of the exciting things about physical activity is that it seems to show promise in terms of having benefits for people who have had cancer and other chronic diseases.

This evening I wanted to cover two or three basic areas of the role of physical activity in survivorship. The first is, basically, what are the benefits of being more physically active? What specifically do we know about how exercise helps the body, and what areas of the body are most benefited through regular exercise. We'll look further at the research that has started to look at how exercise is particularly vital for cancer survivors. There is really not much data available yet in this area. We know a lot about the benefits of exercise in general before developing a chronic disease, but much less about the role of exercise and cancer survivorship. Finally, probably one of the most important aspects of the talk tonight, we'll talk about how to start being more physically active in your own lives.

To start my talk, I want to talk a bit about cancer risk factors so you can f see how exercise measures up to other behaviors that are related to cancer risk. First of all, we know there are non-modifiable risk factors – things that we cannot change. These are things like family history, the types of cancers that have been in our family lines, including our own medical histories with cancer and other

chronic diseases. Our age – as we know, cancer is a disease of aging, so as people get older they have a higher risk of developing cancer. And gender – as we know, hormone-related cancers related to estrogen, for example, are much more likely to occur in women and, likewise, for men testosterone-related cancers are more likely to be seen in males. Those are factors that we cannot change at this point in our lives. While they have significant importance related to evaluating cancer risks, they are not things we can change. So we move on to modifiable risk factors. These are factors that are more related to our everyday health habits that have some relationship to cancer risk and we suspect, therefore, may also impact people's risk of getting a cancer recurrence or developing a cancer after they've had cancer. The one I want to focus in on most tonight is the role of diet and exercise, and that is considered the second preventable cause of death in the U.S. after smoking. Smoking is the largest contributor to chronic disease risks, and lung cancer actually kills more women than breast cancer, for example. We need to think about smoking. But tonight we want to talk particularly about diet and exercise because we haven't known as much about their use in cancer. We've known about smoking and it effect on the body for many years, but we haven't realized that obesity and being sedentary also can contribute to cancer risks.

At the National Institute of Health they refer to this area of diet and exercise as 'energy balance', meaning that when we want to think about weight loss we need to look at both sides of the equation – what we're taking in, in terms of our food intake, and how much we are able to burn calories through exercise. To get the maximum benefit from habits that can help us lose weight, both moderating the diet and exercise are important. But, overall, we will find that exercise reaps the most benefits of any other health habit that we can practice. We've found that across types of cancer that people's body weight is related to cancer risks, both for developing a primary cancer and for developing a recurrence in survivors. Alcohol can also contribute to risks. We're not going to focus as much on that tonight. Maybe Dr. Demark-Wahnefried will do some of that. And we will not talk about environmental exposures, which is another area of research right now related to cancer risks.

This just kind of brings home what I just mentioned to you. It shows the actual data indicating the number of people who died between 1990 and 2000 increased in the United States, but particularly increased in terms of the contribution of lifestyle factors such as smoking. And right there in second position you see poor diet and physical inactivity. They accounted for 400,000 deaths in the year 2000 in the United States. Think about how many deaths could be saved if people quit smoking and were more active and concentrated more on the quality of their diet--nearly a million people in the U.S.

Again, of all the things that we can do to help our health, regular exercise reaps more benefits than most anything else that we can do because it affects all the systems of the body and has very positive effects. To look more closely at what some of the benefits are, I found this anatomical drawing by Leonardo da Vinci.

We think of him as a renaissance artist but, indeed, he was one of the first to do these very intricate anatomical drawings. So I wanted to use that to show the different levels of benefits from exercise. We benefit on a physical level, physiological level, and psychological level from exercise. We know that people who exercise more actually have better brain health because there is more oxygen to the brain. There is actually some evidence now that people who exercise more may be less likely to develop Alzheimer's disease, for example. We know that it works all the muscles in the body and that it is particularly good for cardiovascular health. It helps to increase the heart rate and circulation in the body. Also, the bones are benefited if we do weight bearing exercises so that we can be protected from osteoporosis. Blood pressure, cholesterol, and the immune function in the body all are improved among people who exercise regularly. And, finally, on the psychological side of health we find that people who exercise are less depressed. They tend to have a more optimistic view of the world. We call that having a more positive quality of living. They tend to have higher self-esteem, self-efficacy and overall measures of psychological well-being. Whichever way you want to look at it, exercise has beneficial effects. And, finally, in the end this is the most important message to take away from this slide – that people who exercise regularly are less likely to develop cancer and they survive longer after a cancer diagnosis.

We see, here, Lance Armstrong as someone who has certainly beat cancer, but has been such an avid person with extremely high levels of exercise, and he certainly is an elite cyclist, having won the Tour de France seven times. The good message to take from this particular slide is that you don't have to be an elite athlete to get benefits from exercise. You can be simply doing much, much more moderate exercise to gain the benefits as a cancer survivor. There is more information here on why it's so important to be physically active, and that is that people who are physically active are more likely to maintain a normal body mass index (less than 25 $kg/m^2$), less likely to develop all types of chronic diseases, likely to recover faster from surgeries, report a better daily quality of life, and live longer in general.

How are we doing in the U.S. in terms of physical activity? Virginians are pretty much in line with the United States. About 22% or so of Virginians, and slightly more overall Americans (about 24%), report no leisure time physical activity. They are doing nothing after their normal activities of the day, which for most Americans means sedentary behavior. Almost 50% of Virginians reported doing moderate exercise, and about 26% or so are doing vigorous exercise. That's about 75% of Virginians, and just less than that in the U.S. for people who are exercising to some degree. That is actually better than just a few years ago. Virginia ranks 23rd in the country in terms of being physically active. Colorado ranks first.

Let's talk now about exercise and cancer survivors and what the research has shown. Again, this is early in the research process for this particular area of study. Limits of doing research in this area: there have not been very many well-

defined long-term studies; they are expensive; it's hard to recruit and retain people. There are a lot of reasons that there is not more being done right now in this area. Most of the data we have would be considered observational. In other words, we can show that people who exercise more get less cancer recurrence, but we are not able to show from the studies that it is a cause and effect. There could be other reasons that could account for those results. Most of the studies that have been conducted in this area were looking at exercise in only one or two types of cancer which have been studied. Breast cancer and colon cancer are where we do have some data. One study that is interesting was very recently done by Michelle Holmes, looking at the relationship between exercise after a woman has been diagnosed and breast cancer survival in women who have had Stage I, II or III. This was looking at data from the Nurses' Health Study, which is a large set of data which has been collected since about 1976. It has been helpful in looking at epidemiologic research questions. Its limitations include the fact that nurses are not representative of the rest of the population. They are working in a health setting, more aware of benefits to health, and generally tend to practice higher levels of positive health habits. Nonetheless, she was able to compare women in the lowest level of exercise, exercising less than one hour a week, to women at various increments above that and found that even starting at three hours a week, which is about only about thirty minutes per day, those women showed significantly lower breast cancer recurrence, breast cancer mortality, and all-cause mortality (death from any cause) compared to women who were exercising less than an hour per week. So that's pretty profound and very exciting, and Dr. Holmes is one of the few to be looking at the questions in terms of women's level of exercise after the diagnosis of breast cancer.

Secondly, we have a couple of studies by Meyerstadt, just recently published in 2006, in colon cancer survivors. One of his studies was looking at the same data set with the Nurses' Health Study population. He found similar results to Michelle Holmes' except that he found the threshold to be higher. In his population, in his research data, he found that patients need to be exercising at least four to five hours per week rather than just three hours a week, as in the breast cancer study, versus those in the lower levels of exercise. They too showed a reduced colon cancer mortality recurrence or all-cause mortality, even in Stage III cancer, so this is very exciting. We had thought that maybe at Stage III it might be the case that patients might not benefit from exercise after diagnosis but both the Holmes study and these colon cancer studies say that indeed it can be helpful and we've shown some pretty strong data to show that it does reduce risk of recurrence and mortality. Very exciting. We need more information. We need to do more research. In other words, how much exercise really is required in different types of cancers to get these positive effects?

What are the characteristics of people who are more likely to start exercising? Not everybody is motivated enough to actually start doing it even if they think that it's something they would like to do. And what is the mechanism for the positive benefit? Is it through the weight control aspect or is it through another molecular or metabolic mechanism? A study was recently done to look at the

characteristics of patients who might be more likely to exercise. This was done in yet another type of cancer, with patients having multiple myeloma. Jones et al. studied the determinants of intention to exercise in patients and found that it basically came down to two factors. One was that people who saw exercise as more beneficial than those seeing it less beneficial were more likely to exercise. And those who perceived it as being easy to exercise rather than difficult to exercise were more likely to exercise. So it was beneficial and ease of doing that were the two predictors. This was in spite of how old a person was. Race was not related. Gender was not related, nor stage of cancer. So it didn't matter what stage they were at, what gender they were, or how old they were. It came down to these two things – benefits and ease of doing.

The American Cancer Society has recently released their new guidelines for physical activity and nutrition, and their guidelines really match up with some of the data we just looked at. They recommend adults to engage in at least 30 minutes of at least moderate exercise daily, on five or more days of the week. That is above your usual activities. You are actually going out and riding your bicycle, or jogging, or walking, or whatever it is that you like to do. Dancing certainly counts. 45 to 60 minutes per day is preferable. 30 minutes is the minimum recommendation, five days per week or more, and 45 to 60 minutes per day preferable for adults. For children and teens, they are recommending at least 60 minutes per day of moderate to vigorous physical activity. It's higher for children but it's very appropriate given the obesity epidemic and the epidemic of Type II diabetes that we're seeing in children and youth. For more on their guidelines you can go to www.cancer.org and click on the link for ACS guidelines.

If you have been convinced that exercise might be good for you, and you're not very active right now, here are the ways to become more physically active. First of all, you have to make a decision. You have to decide that your health is going to be one of your priorities and that, in order to have optimal health, you are going to be physically active. Making the decision is a starting point. If you don't really think about this and make a commitment to yourself, it is unlikely that you will be successful long term. You want to put this on a schedule, if you're just starting, maybe two or three times a week. In the work that I do with cancer survivors I have them use a calendar or a Day-Timer and actually make an appointment with yourself just like you do for your hair appointment, your doctor's appointment, your dentist appointment, and your time with your friends to go have a drink or to go have a snack, or whatever. That is very important. If you are currently sedentary, plain old walking has turned out to be an excellent option. In fact, walking has outperformed more vigorous exercise in several of the studies because people stay with it and it does not over-stress the body. If you are just starting I usually recommend walking 15 minutes a day, three days a week, and start to work up to a higher level. Using a pedometer can be very useful because it gives immediate feedback and I usually target the goal of 10,000 steps a day to work towards. It may take you some time to work to 10,000 steps a day, but that is going to have the most benefits for you.

I'll show you just briefly about a small exercise intervention that I did here in Richmond with African-American survivors. I developed a cognitive behavioral walking intervention called Walking Counts to help women integrate walking into their own routines. They did not come to us to walk. They came to us to learn – education, motivation, and process – their own personal barriers to walking so that this could be a part of their lifestyle. We were testing the feasibility of it. Would women come and be recruited? Would they stay with the program? And we were testing the use of pedometers. This was right before pedometers got popular. We were also looking at the impact of self-assessment, education and motivation on their overall level of exercise and changes in their body mass index, and changes in their attitudes in related areas.

Our sample was about 55 years old. That was the mean age. The mean weight was 190, with a BMI of 32.7. So these women were overweight. They just happened to be that way. We did not particularly recruit people who were overweight, although that's another good way to do a study like this. 91% of them had education beyond high school. Half of them were married, and half were single, divorced or widowed. 86% of them were postmenopausal. 60% of them had been diagnosed within the past six years. The majority had had both chemo and radiation. Most of them were not on tamoxifen, did not drink regularly, and did not smoke. You can see our study results here. We were very pleased with them. They started with a baseline of steps per day of around 4,800 steps, which actually was very good for a baseline level of activity. They just about doubled that by the end of the intervention. That was a statistically significant change. And all the other measures also. So it was a significant change after eight weeks. That means the BMI was reduced, their weight and body fat were reduced, waist and hip and arm circumferences were all reduced, as well as systolic and diastolic blood pressure. Attitudes also changed in a positive way after eight weeks. We were actually very surprised with all the benefits and statistically significant factors that we saw. The only thing that did not change was cancer worry, but this group did not show particularly high levels of cancer worry at the beginning and that would probably account for that result.

As you can see here from this graph, when we tested the women after three months the women were actually still walking so that statistical significance remained for walking, also for blood pressure, and several other factors after three months as well. I still run into some of the Walking Counts women as I go across campus, in town, and so on, and I am delighted to see that many of them tell me that they are still walking. They are very impressive and I've been very proud of them.

So, tonight, we've talked about the fact that exercise has multiple benefits to the body on both a psychological and physical level, and that we can reap the most benefits from exercise than any other health habit that we decide to take on. In general, people who exercise have more positive health outcomes and live longer. The research that has been done with cancer survivors has shown that survivors who exercise have fewer recurrences and longer survival time even

with just exercising as little as three hours per week, or about 30 minutes a day, compared to people who exercise less. This is very exciting information for survivors.

For people who are not currently exercising, or for those who are, walking is one of the best activities that you can select. People who start out want to work towards a goal of 30 minutes a day, and then to work towards 10,000 steps or 60 minutes a day long-term.

Thank you so much for coming. Our next speaker is Dr. Mary Helen Hackney, who will talk to you about the importance of screenings and other types of follow-up care for cancer survivors.