

The Impact of Physical Activity on Cancer Patients

Abstract

Understanding the correlation between physical activity and cancer is complicated. There is a unique relationship between physical activity and cancer; studies show that physical activity can lower the risk of cancer development and reduce further cancer growth. Characterizing every detail of the studies is an important role in finding solid results and obtaining proven data for further research. Counseling, fighting obesity through physical activity, and creating the truth about cancer prevention through quality physical activity are all things that have laid the foundation for research on this topic. Unfortunately, the mechanistic targets and effects of physical activity interventions on carcinogenesis process have not been thoroughly studied in recent years. Establishing more renowned knowledge on physical activity intervention on the carcinogenesis process is the next experiment that will be conducted in order to get factual answers to the study of "if physical activity does reduce the risk of cancer development."

Introduction

Physical activity has been shown to have a beneficial effect on cancer patients. Whenever cancer patients engage in any type of activity, it can reduce further cancer development. It has been proven that people who do not engage in physical activity are more likely to develop cancer. With this information, doctors and medical professionals should be compelled to encourage every patient to get a sufficient amount of physical activity, whether walking or lifting weights. Studies within my references have shown that "physical activity reduces the risk of cancer and, in some cases, prevents the formation of cancer cells in the body" (Rogers 271-296). This study shows tremendous upside to the incorporation of physical activity into cancer patients' lives, as well as in the lives of people who are genetically prone to developing cancer. Although the relationship between physical activity and cancer can be quite complex, more studies and data analysis will help to improve understanding and knowledge of the subject. It is only a matter of time before scientists and doctors can give the public and themselves a complete and detailed understanding of the correlation between physical activity and cancer.

When discussing the importance of physical activity and cancer, it tends to be overlooked in many instances. Physical activity should be incorporated into every single person's life, and more importantly, the lives of cancer patients, because of the beneficial factors that come along with it. "Evidence for the beneficial effects of exercise will be strengthened with more studies and analysis of data sets with improved knowledge regarding physical activity" (Westerlind 1834-1840). The more research, experiments, and studies are done, the more beneficial effects can be discovered and implemented into all lives across the world. Physical activity plays a role in the human body's physiological, immunologic, and hormonal regions, which is a crucial information for future reference. The overall success and discoveries made in the medical field are extraordinary and will only improve with time and medical improvements. One day, there will be technology that will allow scientists the ability to cure the "incurable" diseases that the world faces right now, like cancer.

Cancer is not simply one disease but many diseases involving both genetic and environmental factors (Westerlind, 1834–1840). Obesity is cancer-causing and can be prevented with physical activity. Weight control is linked to increased cancer risk within the body. Some people who suffer from obesity feel like they will never be able to lose excess weight. Obesity is cancer-causing and can be controlled by some simple physical activity and motivation. "Several plausible biological mechanisms have been proposed to explain the cancer-preventive effects of exercise" (Na 176–183). These biological mechanisms are things like central adiposity, weight

loss, growth factors, and alterations to immune functions. Although exercise cannot cure cancer itself, it can help prevent the further development of cancerous cells. The main focus of cancer patients is to implement exercise into their lives to help them conquer and fight against cancer. With the future of medicine looking brighter by the day, "the determination of the optimal load of physical activity that can elicit cancer-preventive effects merits further investigation" (Na 176–183).

Discussion

Counseling throughout the process of constant physical activity is an excellent way to help those who are not motivated to work and reduce their future risks of cancerous diseases. A study conducted by Depenbusch states, "Our findings suggest that people with cancer might benefit from counseling that is tailored to their individual exercise experience" (Depenbusch 1856–1863). Cancer is a complicated battle in a patient's life, and counseling can reduce stress and give the patients a form of encouragement throughout the process. With some encouragement and some quality, meaningful exercise with the help of a counselor or mentor, this can make a world of difference for the patient and heavily affect the improvement of their health. Depenbusch's main goal was to examine the relationship between exercise counseling and post-diagnosis physical activity in patients with cancer by investigating the role of patients' satisfaction with exercise counseling as well as the moderating role of patients' previous physical activity (Depenbusch 1856–1863). Physical activity through counseling is considered one of the best strategies for managing the side effects of physical activity like reduced fatigue, improved physical functions, and increased quality of life. The studies that have been conducted in recent years have proven the positive impact on cancer patients who engage in regular and constant physical activity.

According to Lee, "Physical activity is associated with a lower risk of developing certain site-specific in cancers, particular colon and breast cancers" (Lee 1823–27). Physical activity lowers the risk of developing cancers, which is outstanding considering there is now concrete evidence in this case. This is a clear association between physical activity and reducing the risk of developing cancer, but there is an unclear relationship between them. For example, the duration, amount, and intensity of physical activity required to decrease the risk of developing cancer is really complicated to measure because of age, sex, weight, and the type of cancer being treated. "Medical professionals are in the process of finding a reasonable study and tests to be able to determine this instance" (Lee 1823–27). With more research, these complications that the scientists face in trying to figure out a suitable route will only be solved with time, knowledge, and professionalism.

Cancer prevention is the biggest goal in every doctor's and scientist's mind, because finding a way to prevent or even cure cancer would be revolutionary. When discussing anything cancer-related, physical activity is a risk reducer. In a sense, physical activity is a form of cancer prevention. It doesn't cure cancer but positively impacts the risk factors of cancer within the human body. Individual characteristics of a person play a role in the way they should exercise, and there are many other characteristics, including genetics, type of cancer, and stage of carcinogenesis (Westerlind 1834–1840). Some people are more prone to developing cancer, whether it occurs naturally or genetically. Genetic cancers are the most common because they can be passed down over many generations. Genetics may also play a role in body build, physical functioning, and capacity for conditioning. With this information known, a person should get themselves tested early on to help prevent or lower the risk of cancer and start incorporating physical activity into their everyday lives.

Recent Progress

For future research, Westerlind advises "studying the potential for inhibition and stimulation of cancer development with physical activity" (Westerlind 1834–1840). Studying this would help form a better understanding of the effects that physical activity plays on cancer development. Researchers will be conducting this experiment very soon and will use the information to give the absolute best results. Another experiment that is planned to be underway is the demonstration of a dose response that would strengthen the causal relationship and help define the optimal dose of exercise for a patient (Westerlind 1834–1840). This will explain the age of individuals, the type of cancer being treated, and the stage of carcinogenesis.

Figuring out the overall effectiveness of physical activity against cancer is a key focal point of the research. The effects on anti-initiation and progression in cancer tissues, for example, in the colon, lungs, pancreas, and mammary. This is critical because understanding and detailed knowledge on the topic allows researchers to reach the best conclusion on whether physical activity is adequate for reducing cancer development in a patient. Another big determination is "identifying the minimal dose, including the intensity, frequency, and duration of exercise needed to achieve the anti-carcinogenic effect observed in the recommendation" (Rogers 271-296). This has a significant impact on the results of physical activity and the development of cancer. If these things are found, and scientists can be able to determine how to measure a dose for every person correctly, it would be a revolutionary discovery in the medical field. Afterward, patients could be prescribed a quality physical activity plan for their bodies, which would boost their motivation because they would have a personal workout plan that could help with further cancer development. Lastly, creating more knowledge surrounding basic science, clinical, and epidemiological research that is focused mainly on cancer. The reasoning behind this is that "cancer links exist so that the potential biological pathways most influenced by exercise identified in pre-clinical models can be translated into human interventions" (Rogers 271-296).

References

- Depenbusch, Johanna, et al. "The Association Between Physicians' Exercise Counseling and Physical Activity in Patients with Cancer: Which Roles Do Patients' Satisfaction and Previous Physical Activity Levels Play?" *Psycho-Oncology* (Chichester, England), vol. 29, no. 11, 2020, pp. 1856–63, <https://doi.org/10.1002/pon.5506>.
- Lee, I. Min. "Physical Activity and Cancer Prevention-Data from Epidemiologic Studies." *Medicine and Science in Sports and Exercise*, vol. 35, no. 11, 2003, pp. 1823–27, <https://doi.org/10.1249/01.MSS.0000093620.27893.23>.
- Na, Hye-Kyung, and Sergiy Oliynyk. "Effects of Physical Activity on Cancer Prevention." *Annals of the New York Academy of Sciences*, vol. 1229, no. 1, 2011, pp. 176–83, <https://doi.org/10.1111/j.1749-6632.2011.06105.x>.
- Rogers, Connie J., et al. "Physical Activity and Cancer Prevention: Pathways and Targets for Intervention." *Sports Medicine*, vol. 38, no. 4, 2008, pp. 271–96, <https://doi.org/10.2165/00007256-200838040-00002>.
- Westerlind, Kim C. "Physical Activity and Cancer Prevention - Mechanisms." *Medicine and Science in Sports and Exercise*, vol. 35, no. 11, 2003, pp. 1834–40, <https://doi.org/10.1249/01.MSS.0000093619.37805.B7>.