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Augmenting the treatment of cancer through dietary management

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It has been known for nearly a century that dietary changes can affect the rate of cancer induction and progression. Newer research has revealed that many cancers typically demonstrate a high metabolic and glycolytic rate, which results in resistance to cancer treatment via several molecular and physiologic mechanisms. Recent data has also revealed the significant role of nutrition in cancer care and its effect on traditional treatments such as chemotherapy and radiation therapy. In our mouse model, calorie and carbohydrate restriction has been shown to increase the efficacy of radiation therapy in preventing the growth of breast cancer cells. Clinical data has recently revealed that dietary changes can significantly decrease serum glucose levels in patients with brain tumors, a factor which has been shown to correlate with better overall response to treatment. This demonstration will present data illustrating the effect of diet on several of the metabolic pathways that are altered via dietary changes, including both calorie and carbohydrate restriction, and the methods with which these alterations appear to modulate the effectiveness of cancer treatment in both the laboratory and clinical setting.

Biography

Colin E Champ is a graduate from the Massachusetts Institute of Technology and is currently an Assistant Clinical Professor at the University of Pittsburgh Cancer Institute in the Department of Radiation Oncology, where he cares for cancer patients and researches both radiation therapy and the effect of diet and exercise on patient outcomes. He has published and lectured on these topics extensively, and serves as a member on the editorial board of several journals. He has also been featured by the Gupta Guide with Sanjay Gupta, The National Cancer Institute, and the American Society for Clinical Oncology.

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