

Nutrition assignment



Nutrition for Health and Wellness Assignment # 2 Research claim: Probiotics in Preventing Colon Cancer Probiotics in preventing colon cancer Humans are composed of foreign species, which were not created by the body. These living organisms can be beneficial to our body and can also have detrimental effects as well. The human body relies heavily on these organisms for daily metabolic processes. Probiotics are one of the many living microorganism's that can be found in the human body.

It is said that probiotics have been traced to the prevention of colon cancer. The topic of what probiotics are will be discussed in full detail, which will be followed by the explanation of what and how colon cancer works. The final topic that will be discussed is how probiotics can help prevent colon cancer, and the scientific evidence. The debate on whether or not this claim has been widely approved will also be discussed as well. Probiotics are living microorganisms that are naturally found in the body, and believed to be beneficial to the host organism.

Our body The effects of probiotics can be highly influential to our body, when given in the right amounts. The types of probiotics are usually classified in strains. Since it is a living organism, it has its own genetic information, thus can providing an array of various types. Our intestines are made up of hundreds of these bacterial species. They help in keeping the intestinal linings healthy, and assist in breaking down food. Researchers have claimed that many disorders that are put upon the body are caused by the imbalance of these microorganisms in the intestines (Caret, 2004).

The imbalance can occur from consuming antibiotics, after an infection or when the lining of the intestines is damaged. It is said that probiotic organisms assist in maintaining a strong immune system. In the last century, there has been an increase in allergic cases and auto immunity. This may be a case of the immune system not being challenged by pathogenic organisms. Introducing friendly probiotic organisms is believed to challenge the immunity in a healthy way (Caret, 2004).

Probiotics also help the body in recovering from various ailments, which include; diarrhea prevention in children and adults, irritable bowel movements and preventing eczema. Studies have also shown that probiotics have been linked to the prevention of childhood ear infections, strep throat, colds and diarrheal illness (Caret, 2004). Probiotics have become widely popular in today's diets and meals. These organisms' can be found in dairy products such as, yogurt, cheese and other foods containing live cultures.

Probiotics also come in various forms such as powders, tablets and capsules. The forms in which you consume these probiotics do not matter, as long as you have a sufficient amount to start growing in the intestinal region. Experts presume that the normal prescribed amount should be around 50 billion to as many as 1 trillion live cells per dose (Caret, 2004). Although probiotics can be beneficial to you, there are some people that cannot consume them. Probiotics can pose as a threat to those who have a weakened immune system.

Since it does act as a bacterium, a weakened immunity may require a substantial amount of energy in fighting the organism, which can create

complications within the body. Studies have also shown that those who suffer from pancreatic problems have a higher chance of dying when given these probiotics (Oaret, 2004). Since these probiotics have a pathogenic nature, many issues arise regarding their infectivity and long or short-term effects on the human body. An experiment conducted by researchers from the public health institute in Tokyo, analyzes the negative effects that probiotics may have on a host organism.

The experiment was performed by inserting an array of probiotics into lab rats and observing the effects they had. The experiment showed that the probiotics had little effects on the rats for the most part (Ishibashi & Yamazaki, 2001). There was no sign of the bacteria causing opportunistic infections, which means that there were no long-term effects. As for the infectivity of probiotics, there were no signs of this during the experiments, although the host organism immune system was triggered by the entry of these probiotics.

Cancer is defined as a disease in which abnormal cell division is witnessed, which later turns into the invasion of other tissues. Cancer cells have the ability to spread to other parts of the body via blood and lymph vessels. Cancer is not titled as a single disease but rather yet multiple, as there are a 100 different type of cancers (What is cancer, 2011). There would be skin cancer. Skin cancers originate from the rapid growth of skin cells. Cancers can be categorized and grouped into broader categories.

Carcinoma is cancers that begin on skin or tissues that line internal organs, Sarcoma is cancers that originate in bone cartilage, fat, muscle, blood

vessels and other connective tissues, Leukemia is cancers that begin in blood forming tissues such as bone marrow, and causes abnormal blood cells to enter the blood system, lymphoma and myeloma are cancers that attack cells in the immune system, and central nervous system cancers begin in the tissues of the spinal cord and brain (What is cancer, 2011). All cancers begin as cells, which are the units of life.

The human body is comprised of many types of cells. These cells usually go through stages in which they duplicate and create new cells. This process is controlled and needed for basic life to exist. As the cells die and become damaged they are replaced by a new ones. However, sometimes this process does not proceed as planned. It is worth noting the genetic makeup of the cell (DNA) can go through a mutation, which alters the process of cellular life. This mutation can see the rapid duplication of cells that will mean cells not dying.

The extra cells are what form a tumor (What is cancer, 2011). Tumors are classified into two major groups, benign tumors and malignant tumors. Benign tumors are not cancerous, in the fact that once expelled out of the body they will not return. Malignant tumors on the other hand are cancerous which means cells in this tumor can spread to other organs in the body and invade the tissue. Not all cancers form tumors (What is cancer, 2011). Colon cancer is the cancer that originates in the large intestine, or the rectum.

It is often referred to as colorectal cancer. The cancer is one of the most common types and has claimed the lives of many. However, if detected early, doctors can cure the cancer. Cancer is an alarming disease and takes

the lives of millions each year. Recovery of cancer is usually optimal when detected early. Forms of treating cancer include surgery, chemotherapy, and radiation therapy (What is cancer, 2011). The ways of contracting cancer is yet to be fully outlined as we lack insufficient information yet to how the disease works.

New research is conducted aily about the disease, but until we know the cause we can do as much to prevent ourselves from getting the disease. Studies have shown that probiotics have the ability to suppress and prevent tumor growth in a colon cancer patient. A research study done at Chang Gung University, Taiwan, proved that through oral inoculation of certain probiotics, tumor growth can be reduced in colon cancer victims (Chen et al. 2011). Professionals in the department of pediatrics, at the university, did the study on lab mice. The rats were orally injected Lactobacillus Acidophilus, which is a robiotic bacteria.

This bacterium is known for its ability to withstand gastrointestinal environments, and its capability to adhere to human epithelial cell lining. The bacterium is seen to have a positive effect on the body, as it has the ability to stop bowl irregularity and prevent diarrhea. During the experiment, the lab mice were injected this probiotic and were closely observed. Dorsal flank tumors and segmental orthotropic cancers were implanted into these mice before hand. The results of the experiment saw the tumor growth reduced by 50%, compared to untreated mice.

The experimenters concluded that Lactobacillus Acidophilus may play a role in reducing tumor growth and may be associated with modulating the

cellular response triggered Another research was conducting regarding fermented milks and its effects on Colon cancer (Saikali et al. 2004). The research was aimed at viewing the effects in which fermented milk containing probiotic cultures, had on colorectal cancer. The researchers analyzed past records made on human and animal consumptions of probiotics, and Jotted whether the bacteria had an effect in reducing colon cancer.

The claims made within the research states that, probiotics posses an anti carcinogenic effect. This claim was also made in the research that was discussed earlier. The findings also state that probiotics in fermented milk can beneficially regulate major intestinal functions such as, detoxification, colonic fermentation, and immune status, which may accompany the development of colon cancer. For most research regarding probiotics and colon cancer, the evidence is never a hundred percent conclusive. The reason to this is that extensive research has not been done which can fully state this claim.

In conclusion, probiotics are biological agents that are beneficial to the human body. They are usually found in the intestines and can help regulate that region. Cancer is a disease that plagues many and has been a concern in the late century. The disease is described by the rapid formation of cancer cells that later occupy vital organs. There has been research and experiments regarding the effects of probiotics on the human body, and how it can prevent colon cancer. For most of the data conducted on probiotics, it is safe to say that they do not have a negative effect on the body.

Researchers have also stipulated that probiotics can suppress colon cancer and reduce the growth of tumors by as much as 50%. Although these findings are beneficial to the claim, they are not fully conclusive. Works Cited

Chen, C. , Lit-I, W. C. , Kong, M. S. , Shi, H. N. , walker, A. W. , Lit-I, C. Y. , & Huang, C. T. (2011, September 30). Oral inoculation of probiotics

Lactobacillus acidophilus NCFM suppresses tumour growth in segmental orthotropic colon cancer and extra- intestinal tissue [Electronic version].

British Journal of Nutrition, 1-12. doi: 10. 1017/ soon 14511004934

Ishibashi, N. , & Yamazaki, S. (2001, February). Probiotics and Safety

[Electronic version]. The American Journal of Clinical Nutrition, 73(2), 4655-

470s. Jaret, P. (2004, July 20). What Are Probiotics? In WebMD. Retrieved

November 10, 2011, from [http://www. webmd.](http://www.webmd.com/digestive-disorders/features/what-are-probiotics)

[com/digestive-disorders/features/what-are-probiotics](http://www.webmd.com/digestive-disorders/features/what-are-probiotics) Cultures, and Colon

Cancer [Electronic version]. Nutrition & Cancer, 49(1), 14-24. dot: 10. 1207??

15327914nc4901 3 What Is Cancer (2011, July 29). In Nation Cancer

Institute. Retrieved November 10, 2011 , from [http://www. cancer.](http://www.cancer.gov/cancertopics/cancerlibrary/what-is-cancer)

[gov/cancertopics/cancerlibrary/what-is-cancer](http://www.cancer.gov/cancertopics/cancerlibrary/what-is-cancer)