Your Name

Instructor Name

Course Number

Date

The Startling Link Between Sugar and Alzheimer

1. Alzheimer's disease is a type of disorder in which the brain cells tend to waste away and end up. The signs of this ailment are forgetting incidents that have taken place in recent times. Persons carrying this disease can develop severe memory disorders and became incapable of daily tasks. It is normal to lose the memory of ordinary things happening daily. However, it becomes an ailment when the loss of memory becomes severe and persistent. Alzheimer's disease is the most common cause of "Dementia", which is characterized by a continuous decline in the cognitive abilities of a person.

 Scientists could not understand precisely the causes of Alzheimer's. The physiological defect that causes this disease is, however, considered to be the failure of the brain's proteins to function normally. Their failure disrupts the functionality of neurons, which leads to give rise to numerous toxic events. As a result of this disease, the brain is damaged. The connections between the neurons become loosened. Eventually, the neurons start dying.

 Researches have indicated various risk factors of Alzheimer's disease. People in older age are more susceptible to acquiring this disease. Mostly the patients having this disease are sixty-five years old and onward. Genetic factor is very active in the acquisition of this disease. People having first-degree relatives (parents, brothers, sisters) affected with Alzheimer's have a higher risk of getting this disease. Moreover, there is evidence that people affected with Down's syndrome are prone to have this disease. People having poor sleeping habits, problems of heart, and an inactive lifestyle are more vulnerable to this disease.

 People should take on a healthy lifestyle to avoid diseases like Alzheimer's. It develops slowly and becomes serious with time. The clumps in the brain take time to be formed; cognition declines slowly as well. If someone is not conscious from the beginning, it can become a threat to that person’s health. The western-style diet should be avoided; the low-sugar diet is prescribed.

2. It is considered to be a type of diabetes, hence referred to as "type 3 diabetes". As type 1 diabetes is categorized as autoimmune and type 2 as chronic, Alzheimer's is thought to be another type of diabetes that is caused by excessive use of sugar. The Western-style diet contains a huge amount of sugars. A study revealed that people who had higher levels of sugar in their blood had more tendency of cognitive disorders. The level of blood sugar has a direct correlation with cognitive decline. A professor at New York University studied the connection of diabetes with Alzheimer's disease. Her studies brought her to the conclusion that people who had type 2 diabetes are two times more likely to get Alzheimer's. Further, people having diabetes and getting treatment of insulin also had more tendency to acquire Alzheimer's. This study indicates that increased use of insulin has a connection with Alzheimer's. If blood sugar is higher than normal, the patient is more likely to get Alzheimer's. More than eighty-six million people have high sugar levels. Besides this study made by Melissa Schilling, the other studies also suggest that elevated use of insulin is a major risk factor of Alzheimer's. Still, other studies reveal that type 1 diabetic patients who do not use insulin at all have also a higher risk of Alzheimer's. They acquire Alzheimer's because the insulin breaking enzyme (a product of insulin) is little in the body as the body does not produce the needed amount of insulin. Consequently, it is not sufficient to break up amyloid brain clumps. This situation leads to Alzheimer’s.

A study shows that people who have a higher intake of carbohydrates have eighty percent more chances of developing cognitive disease. They are on their way to develop more severe types of cognitive disorders. Such people can do easy tasks of daily life, but they are not capable of undertaking complex tasks.

The other factors that suggest that sugar is not linked with Alzheimer's disease are genetic factors, lifestyle, and environmental factors. These confounding factors affect the brain of a person over time. Even if a person does not have higher blood sugar levels, the person can acquire Alzheimer's due to the genetic changes that ascertain the person will develop the disease. Wuxiang Xie conducted research and stated that Dementia is a psychiatric condition that occurs ubiquitously, and is associated mainly with poor life quality in the old age of many patients. His study reveals another confounding factor of Alzheimer’s, poor quality of life. Therefore, sugar is not necessarily associated with the disease.

3. Sugar may contribute to Alzheimer’s disease. Various researches have shown results that indicate Alzheimer’s association with higher sugar levels in blood. Association of sugar with Alzheimer's disease gives a behavioral explanation of the causes of disease. Persons who have more intake of sugar or carbohydrates over long years of life, they are closer to develop the disease. They demonstrate higher sugar levels in blood. They have usually a static lifestyle. They exhibit traits that indicate the likelihood of developing the disease. However, there is another explanation also to this problem. The genetic explanation describes the causes of disease to be the changes in the genetic patterns of the patient. People inherit a specific set of characteristics from their parents, which enable them to behave and live with certain traits. Evidence shows that people acquire diseases from their parents as well. Alzheimer's is also no exception. The problem lies in the fact that Alzheimer's is not curable in the last stage where it is transformed into Dementia.

 There are uncertainties regarding the connection between sugar and Alzheimer’s. However, evidence supports the linkage between sugar and Alzheimer’s. Many studies show that diabetes has a role in weakening the blood vessels. The weakening of blood vessels increases the chances of having affected by Dementia because it can cause mini-strokes in the brain. When a high intake of sugar exists in a person, the brain cells can become resistant to insulin. This can affect the brain cells, and they start dying. Obesity is also a concerning factor that is caused due to over intake of sugars and carbs. Research indicates that extra fats in a person can release cytokines (or inflammatory proteins, like interferon). The cytokines can cause deterioration of cognition. Obesity that is caused by excessive intakes of sugar is also associated with increased amyloid proteins in their brains in the old age.

4. Future studies can be made for identifying and confirming the connection between Sugar and Alzheimer’s disease. Since the existing researches have indicated the link between the two, they can be used as the guiding source for making further attempts in this regard. The researchers have used the medical histories of Alzheimer’s patients to explore the causes of the disease. They have made conclusions based on their analysis of the empirical data available about these patients. Future studies can be made by using the empirical data of these patients in different perspectives. The future studies should be designed in a way that explains the disease processes in the brain and provide biological pieces of evidence related to their causes. These tests can prove helpful in determining the causes of the disease. The specific cause and effect relationship between sugar and Alzheimer's disease can be identified in researches by developing a model of study or experimentation to establish the results. An animal model can be used to more accurately measure the results of the experiment. To make the test, it is suggested to create a medium for keeping four pairs of mice. These mice should be fed with different amounts of sugars provided that the total input of calories is kept the same. Mice are suggested to be kept in pairs because the gender of an organism is also a contributing factor in the development of Alzheimer's disease. Usually, the females are more persistent and tend to live longer than the males. Testing both the sexes for sugar to be the cause of Alzheimer's will develop more dependable results. The experiment should be carried on for six months. The quantity of sugar given to these mice need to be increased with time. The results will be measured weekly. The connection between sugar and Alzheimer's can be understood by studying the biological processes of their brain. Increased amounts of sugar will consume the enzyme needed for breaking up the amyloid proteins of brains. The elevation of amyloid proteins in the brain will indicate the effect of increased sugar in mice.

5. For future treatment of Alzheimer's disease, awareness among people need to be spread about the disease. Sluggish lifestyles should be discouraged and a supportive environment has to be created to assist people in developing good habits and improving the quality of the aged. Currently, medications used can only help for a time to sustain memory work and cognitive behaviors of the patients. Cholinesterase inhibitors and Memantine are being used to control and improve the cognitive activities. To control the behaviors associated with Alzheimer’s disease, antidepressants can be given. For future treatment, certain medicine has to be developed that could reduce the adverse effects of sugar intake on the production of the enzymes necessary for proper metabolism of amyloid proteins in the brain. Obesity has to be addressed considering it the most harmful phenomenon that contributes to a wide range of diseases including Alzheimer's.