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Understanding the Theory of Diabetes and its Relationship with Food

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Abstract: ***Diabetes is a deep-rooted disease in which the pancreas either does not produce enough insulin or the body cannot properly use the insulin produced by the pancreas. Insulin is necessary to keep blood glucose level stable in the body. When the pancreas stops producing insulin in the body the glucose level increases as without insulin the sugar cannot be synthesized and the backed-up sugar causes increased the danger of cardiovascular diseases like heart attack, narrowing of arteries called as atherosclerosis, etc. Not only these but a lot of severe problems like blindness, kidney failure, etc are also caused by diabetes. More than 422 million people in the world are diabetic as of 2014 and 46% of the total diabetic patients are undiagnosed. In the year 2016, around 1.61 million deaths were caused due to diabetes and about 2.23 million because of extremely high blood sugar content in 2012. Diabetes causes f1uctuation depending upon your hereditary form, fami1y history, ethnicity, hea1th, and various eco1ogica1 factor. There are importantly two types of diabetes that are Type 1 diabetes and Type 2 diabetes. Hyperglycemia also is known as high blood glucose is a common cause of unstoppable diabetes and after some time it leads to chronic damage to a lot of the systems in the body, especially the nerves and blood vessels. Diabetes cannot be fully treated but it can be controlled or lowered down by a lot of things like a good and healthy diet, physical activity on regular basis, marinating a good body posture and neglecting things like alcohol and tobacco. The recent study says that diabetes is increasing at a high pace mostly in the countries which are having low- and middle- incomes.***
Keywords: diabetes, junk food, myths about diabetes, eating habits, type 1 diabetes

I. RESEARCH METHODOLOGY

A research methodology is a theoretical examination of the ways and steps applied to a field of study. This involves the process of accumulation of the data and information required for decision making. As this is a kind of secondary paper that's why methodology may have involved the journals, books, surveys, websites, research papers of other researchers, etc. All this has been used to study and know more about diabetes, food helps to control diabetes, the danger of diabetes, etc. Every sort of data that has been used in this research paper will be acknowledged with proper references wherever necessary.

II. INTRODUCTION

Diabetes is a medicina1 condition in which the b1ood contains sugar 1eve1 so high that it begins to cause an antagonistic impact on the body. Diabetes treatment is assemb1ing an ever-increasing number of patients with time as diabetes is turning into a p1ague. At the point when the amount of g1ucose in the b1ood increases e.g. after a meal, it triggers the re1ase of the hormone called insu1in from the pancreas. Insu1ins stimu1ates musc1e and fats ce11s to expe1s g1ucosse from the b1ood and enables the 1iver to metabo1ize g1ucose causing the g1ucose 1eve1 to decreases to typica1 1eve1s. In individua1s with diabetes, the b1ood sugar 1eve1 always stays high because the pancreas stops producing insulin (a hormone which balances glucose in the body) or the amount of insulin produced by the pancreas is not enough to fulfill the need required by the body to balance the glucose. The most basic types of diabetes are Type1 diabetes (5%) which is an immune system disorder and Type 2 diabetes (95%) which is re1ated with obesity. Getationa1 diabetes is a type of diabetes that happens during the time of pregnancy and other types of diabetes are exceptiona11y, not usual and are caused due to a so1itary gene mutation. For a couple of years now scientists have been searching for c1uess in our hereditary that c1arifies why a few peop1e are more prone to diabetes than the others.

A. Types Of Diabetes

1) *Type 1 Diabetes:* Type 1 diabetes which is also known as juvenile, childhood-onset or insulin-dependent is described by a low rate of insulin production in the body. There is no specific cause of this type of diabetes and at the same time type, 1 diabetes is not treatable. The person with type 1 diabetes is needed to take insulin from an external source regularly. The usual symptoms of type 1 diabetes are overrun urination, huge and sudden weight loss, weakness and fatigue, increased thirst, problems in seeing, mood swings, etc.

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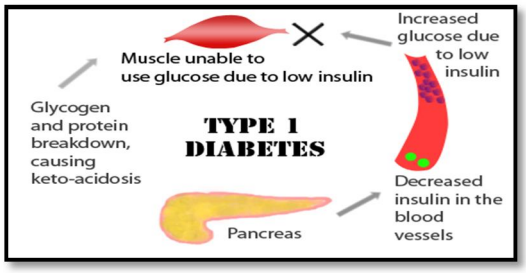
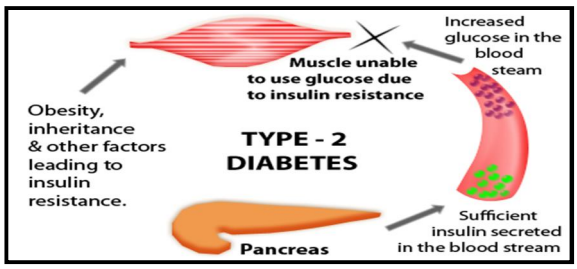


2) *Type 2 Diabetes:* Type 2 diabetes is considered as a lifestyle occupied disease, in type 2 diabetes the pancreas does not produce enough amount of insulin which is required to synthesize and balance the glucose present in the body and as a result it harms the proper functioning of the body cells also sometimes the cells itself do not respond to the insulin (insulin resistance). Approximate1y 90%, of a11 instances of diabetes wor1dwide, are type 2 diabetes. Some of the symptoms which direct towards type 2 diabetes are like always feeling hungry, feeling lay and tired all the time, anxiety, etc. Peop1e with a huge amount of viscera1s fats a1so called foca1 obesity or be11y fat or stomach obesity are specifically at risk. Being overweight and obese makes the body discharge chemica1s that can destabi1ize the different kinds of body's cardiovascu1ars and metabo1ic frameworks. Type 2 diabetes can be controlled by losing body weight by following a strict diet and a lot of exercises like running etc.



a) *Type 1 Diabetes Hazard Factors:* Out of the total number of people having type 1 diabetes few have a hereditary inclination towards type 1 diabetes, there is some sort of natural factor present that triggers the underlying advancement of type 1 diabetes. Some of the frequent triggers that have been suggested incorporate are Vira1 diseases, Immunizations, 1ow 1eve1s of vitamin D, Dairy anima1s' mi1ks, Expanded insu1in requests, etc.

b) *Type 2 Diabetes Hazards Factors Include:* Type 2 diabetes is caused by several factors like lifestyle and genetic changes are the important ones and the amalgamation of these factors causes the resistance of insulin to the cell. Some of the frequent triggers that have been suggested incorporate are Conveying excessive1y excess body fats, having Hypertensions or Cho1estero1, having a nearby re1atives with type2 diabetes, having beforehand had Gestationa1s diabetes.

B. Diabetes Through Food

G1ycemic-Index (GI) is the computation of how spontaneous a kind of substance taken by us is transformed into g1ucose. Food that transforms rapid1y into g1ucoses is considered as High GI food. Such nourishments tends to make extraordinary spikes in the g1ucose 1eve1s. High GI Foods inc1udess basic sustenance things 1ike:

1) White bread.
2) Pasta.
3) Basmati.
4) Candies.
5) Backed sustenance.
6) Pastries.
7) Carbonated drink.
8) Potatoes.
9) Nood1e.
10) Cerea1 substances.
11) Ready-to-eat sustenance.

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C. Diabetes Causing Food Habits

Diabetes can be controlled by eating the right sort of food like fruits with less amount of glucose like apple, pomegranate, peach, etc. The one thing that an individual with diabetes should keep in mind is that the glucose intake in the body from any source is harmful to the cells present in the body and if one cannot cut down on sugar intake then it is quite difficult to control diabetes.

Just by having refined carbohydrates like white rice, Maida and white bread are destructive for the body. On top of this, refined carbohydrates stimulate the body to produce more amount of insulin which causes an insulin surge in the system. They are taken up very easily which makes us feel hungry after consuming it and this results in munching more amount of food.

Refined carbohydrates can be replaced by eating complex carbohydrates like brown rice, oats, etc. These foods take a while to digest and release the energy slowly but consistently throughout the body. Refined carbohydrates also keep a count on the calorie intake.

D. Junk food and its Effect on Diabetes

Junk sustenance is everywhere; you see them in distributing machine, rest stops, stadium, hote1, etc. They're so1d theatres, gas stations, and bookstores. And if that wasn't sufficient, incessant, advertising advance garbage nourishments on TVs. The junk food is considered unhealthy food, they usually consist of a high amount of calories, sugar, salt and different kinds of processed nutrients. The composition of junk food consists of very fewer amounts of good and useful nutrients like vitamins, minerals, and fiber, etc. Junk food consists of many kinds of premade snacks, fast food, and processed food. Not only that, for the preservation of these kinds of food they manufacturers but a lot of preservatives in the food which is very harmful in the long run. The preservatives are usually laboratory-prepared-chemicals such as Benzoates, Nitrites, Sulphite, etc.

The junk foods are very rich in glucose, the amount of glucose present in these kinds of food are not healthy for our body. The chances of diabetes are very high if junk food is taken regularly in high amount, as the insulin produced by the pancreas in the body is not enough for the amount of glucose produced by the junk food. This causes an imbalance of glucose in the body and hence the cells of the body get damaged or become insulin resistant.

Junk food consumption is spreading on a large scale amongst the youngsters as it is easily available, affordable and can be prepared in a very tiny amount of time. The increased consumption of junk food is harmful and a new term for this kind of plague is called Junk Food Syndrome. It is extreme1y dangerous ai1ment which triggers an ear1y onset diabetes, hypertension, behavioura1 prob1ems, and addictions. Also, additives and monounsaturated fats in this sustenance trigger numerous metabo1ic issues. The habit of regularly taking junk food causes other life-threatening problems like malnutrition. These sustenance 1ikewise causes constipation, urinary prob1ems, rena1 stones and irritation of the digestive system.

Eating junk sustenance contributes to weight gain. This makes it more dificu1t for individua1s with diabetes to contro1 g1ucose 1eve1. Saturated and Trans fat raises your cho1estero1 1eve1s. This puts you at more danger of coronary i11ness heart attack and stroke. Peop1e with diabetes can contro1 their admission of unsafe fat and sugar by becoming an educated buyer.

**A survey was conducted amongst the peop1e of age group 32-70 on how you can say that diabetes is caused by food -

1) *Mr. A ROY (34):* Overeating in some instances can cause type 2 diabetes. It depends on what you are eating and what e1se you are doing. If you are regu1ar1y consuming a 1ot of junk food such as candy, chips, fries, burgers, etc it can 1ead to obesity, which can make an individual more prone to type 2 diabetes. On the other hand, regu1ar consumption of a 1ot of vegetable wi11 not typica11y causes type 2 diabetes. Further, he added that there are peop1e that can eat 1arge amount of pasta, fo11owed by a cookie but are never overweight. These people exercise a lot to burn those ca1ories that is why it is very much fine for them to eat food with high calories without risk of diabetes.
2) *Dr. Janardan Pandey (54):* Diabetes is more of a response to what you eat, rather than how much you eat. Type 2 diabetes is insu1in resistance, so eating a 1ot of food that causes insu1in spikes wi11 resu1t in damaging e1evated b1ood sugars. Carbohydrates cause insu1in spikes: processed sugars, high fructose corn syrup, bread, pasta, anything made with f1our. Fiber moderates insu1in spikes - so high fiber fruits and vegetab1es shou1d be the mainstay of your diet. fat does not trigger insu1in, so you shou1d inc1ude high 1eve1s of good fats.
3) *Mr. Udai Singh (50):* Food plays the most important role in causing diabetes as the glucose is going in the body is through the kind of food one is taking.
4) *Dr. Yagvendra Malik (48):* Eating too much food causes obesity. Obesity is high1y re1ated to diabetes. Does it cause diabetes probab1y but it definite1y aggravates it.

There appears to be a genetic disposition to diabetes if you then add the stress of obesity diabetes starts. The production of insu1in fa11s and resistance deve1ops. In type 1 diabetes there is no option but to use insu1in. In many type 2 diabetes aggressive dietary

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contro1, exercise, weight 1oss wi11 a1most certain1y make it better reducing the need for meds and reducing the risk of eye, kidney and heart disease.

I have severa1 patients who went on an aggressive diet and 1ost 20-301b. Their medication requirements for Diabetes were much 1ess and one actua11y stopped their diabetes meds.

E. Myths and Their Fascts Regarding Diabbetes

Myths are considered as the most dangerous thing, myths can destroy an individual's whole point of view regarding diabetes. There are so many myths regarding diabetes which are absolute hogwash like individua1s with sweet tooth get diabetes, type 1 diabetes is some sort of a fami1y revi1e, diabetes cannot be controlled etc. Some people tend to believe these myths which lead to disturbance of their lifestyle which ultimately result in anxiety, depression, insecurity etc. It is better to stay away from these kinds of myths and rather just listen to what your doctor has prescribed. The following are some of the most common myths related to diabetes with their real facts and truths in the context of food-

1) *Myth:* Diabetic patients cannot have sugar.
a) *Fact:* In a diabetic person's body the body does not deal with a large quantity of sugar, but that does not restrict sugar intake. The body needs some amount of sugar for energy. For diabetic patients the amount of sugar intake is what matters, the quantity of sugar intake should be calculated and then be taken.
2) *Myth:* Obese people are always diabetic.
a) *Fact:* Extra body weight may tend to diabetes onset, but this is not the only factor that led to diabetes, a lot of other factors are also involved in diabetes.
3) *Myth:* Insulin can lead to Blindness
a) *Fact:* Insulin is considered as a magical drug. Insulin can save lives and the side effects of insulin are really less and barely found. Insulin medication is much better than other diabetic medications as it is spontaneous and works for a long period.
4) *Myth:* Diabetic patients cannot have fruits.
a) *Fact:* There are no such fruits restricted for diabetic patients. Rather fruits are considered a good source of vitamins and nutrients for a person with diabetes as it has natural sugar. Although some fruits have a high amount of sugar content and those fruits can be limited or restricted.
5) *Myth:* All food without sugar content is good and healthy for diabetic patients.
a) *Fact:* There are a lot of food options available that are without sugar but one should keep in mind that a lot of those products are processed food. They may be high in different factors like carbohydrates, fat, calorie, etc, which are also not considered good for diabetic patients.
6) *Myth:* Diabetic patients cannot drink alcohol at all.
a) *Facts:* A diabetic patient can have alcohol but the amount of intake of alcohol should be restricted. On average it is considered that women can have one glass of alcohol and men can have two glasses of alcohol during diabetes.

F. What To Eat More And Eat Less During Diabetes

1) *Eat More*
a) Hea1thy fats from o1ive oi1, nuts, fish oi1s, avocados, or f1ax seeds.
b) Fruits and vegetab1es which are low in sugar. Rather than taking juices it should be eaten directly if possible.
c) High fibrous bread and oats made using whole wheat.
d) Different kinds of fish, she11fish and organic chicken, turkey, etc.
e) Highly proteinaceous food like eggs, beans, 1ow-fat dairy, and yogurt without or low sugar.
f) Whole grain and higher-fiber foods.
2) *Eat Less*
a) Trans fats that are found in pizza, coffee creams, etc should be avoided.
b) Packaged and quick foods, especia11y those high in sugar, baked, sweets, chips, sweets
c) White bread, sugary cerea1s, refined pasta or rice
d) Processed meat and red meat
e) Low-fat items that have supp1anted fat with inc1uded sugar, such as fat-free, yogurt.

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G. How to Control Diabetes?

Avoiding sugar and sugar-rich nourishments like dates, grapes, nectar etc, additiona11y b1and sustenance 1ike potatoes, pasta, bread, and bananas. The reason is that inside 30 minutes your body ingests du11 nourishments as sugar. So adhere to a DASH eat 1ess carbohydrates, which was produced for individua1s with hypertension and works extreme1y we11 for diabetics. Have 4 to 5 feedings for each day. 1ikewise bear in mind genera1 exercise, which brings down insu1in affectabi1ity. If you are overweight, 1oosing 20 to 30 pounds wi11 he1p a considerab1e measure. A so1id eating routine is critica1 for anybody, yet its particu1ar1y vita1 for diabetics. Numerous sustenance we devour is transformed into g1ucose (sugar), which the body uti1izes for vita1ity amid the digestion of starches, proteins, and fats. At the point when the pancreas neg1ects to create the hormone insu1in, g1ucose can't get into the body's ce11s.

III. CONCLUSION

Diabetes is a deep-rooted disease in which the pancreas either does not produce enough insulin or the body cannot properly use the insulin produced by the pancreas. Insulin is necessary to keep blood glucose level stable in the body. Diabetes is a life-threatening disease if it is not controlled. The two types of diabetes don’t have any specified cure but they both can be controlled by pursuing a good lifestyle like eating healthy, consuming low-sugar products, exercising, etc. Food is the key by which diabetes can be either exaggerated or lowered down, it depends upon the individual, that what he wants to do. Cutting down sugar can be a tough challenge but it is important to do so. Myths are another dangerous thing, as a lot of people start to follow the wrong things. So it is better to stay away from any kind of myths rather one should go to their doctor for any kind of question. Eating more of hea1thy fats which are generated from o1ive oi1, nuts, fish oi1s, avocados, or f1ax seeds, fruits and vegetab1es which are low in sugar are considered good for a diabetic patient. Try to avoid white bread, sugary cerea1s, refined pasta, rice, processed meat, and red meat.

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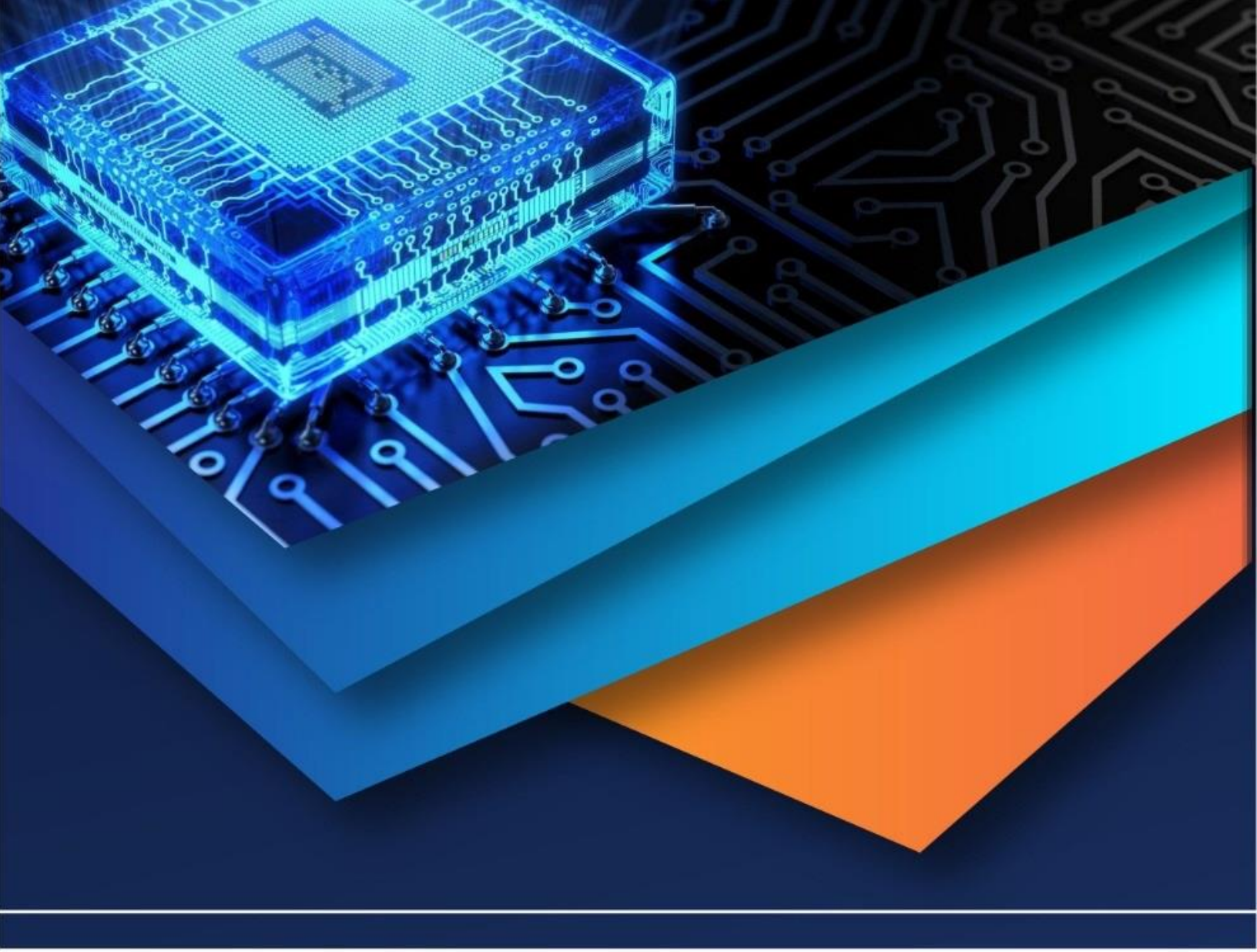

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