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How does the pancreas produce little insulin in diabetes?

Diabetes is caused by the excessive sugar level in blood, and this disease affects the human organs like pancreas. The pancreas, when affected because of excessive sugar levels in the blood stops functioning and starts producing a slight amount of insulin.

**Diabetes**

 Diabetes is a disease caused when glucose and sugar levels in the blood are produced at higher levels than normal. The sugar levels in our body depend upon some factors like our genetics, food, and our psychological states. The food we eat carries sugar and when we intake the food product they sometimes become the reason for a higher level of sugar in our body. Glucose is the main source of energy, and this glucose comes from the food we eat. Sometimes, increased levels of blood may cause some diseases, like, diabetes, and it is not limited to any specific age. People, often consider that the adults are more prone to this disease but it not true, individuals of different ages suffer from diabetes. Our body cells require the glucose to function properly, but it remains in the blood, and our body cells do not get glucose. The little amount of glucose supply becomes a cause for an increase in the glucose or sugar levels leading to diabetes.

**Types of diabetes**

Diabetes cannot be limit to one type; it has different types, and the types are; type one, and type two diabetes. Diabetes is a disease which is caused by varying factors, which may be genes, genetics, and environment where an individual life.

*Type 2 diabetes*

Type one diabetes is a desease, which occurs when our immune system, which is the system of our body fights for infections, and attacks the insulin by destroying it, and the insulin produces beta cells of the pancreas. This type of diabetes is considered to occur in the younger ages and can be treated or diagnosed at the age of 30 (Rawshani et al.). The triggering factors include the autoantibodies, which react against the insulin or glutamic acid decarboxylase. The dysfunctioning of genes and environmental factors like viruses can be also triggering factors for this disease. This type of disease harms the body organs including eyes, kidneys, blood vessels, and heart. One can maintain the sugar levels in the blood, which may lower the risks of further complications.

*Type 2 diabetes*

Type two diabetes is a recent globally expanding health problem, which is associated with the epidemic of obesity, overweight, and physical inactivity. This type diabetes is also caused by genetic disorders of individuals, and the insulin-resistance may be a factor causing this. Overweight causes the insulin-resistance in the body, and the body fats including the belly fats are increased, and people who are not physically active, and they are likely to suffer from type two diabetes (Fuchsberger et al.). The external factors causing type two diabetes may include environmental factors, like inactivity, obese, and unhealthy eating patterns. However, the genetic factors also contribute to type two diabetes, causing the impairment of glucose homeostasis, which is led by the pathophysiological disturbances (DeFronzo et al.).

*Gastrointestinal diabetes*

Gastrointestinal diabetes is caused during pregnancy. The sugar levels are increased during pregnancy, and the placenta produces the insulin-blocking hormone. This develops during the 24th and 28th week of pregnant women, and this increases the chances of risks of diabetes in the fetus. Increased diabetic risks can lead to delivery complications in women. Usually, our pancreas makes insulin but when they stop making insulin, then, there will be a rise in the levels of sugars in our body, and that increase will cause gastrointestinal diabetes.

*Prediabetes*

The sugar level increases more than the normal levels, but this can be reversed by appropriate diagnosis. There are no such symptoms for prediabetes, but the blurry vision, fatigue, and hunger are some of the symptoms.

**Symptoms of diabetes**

The symptoms for diabetes vary, and they are characterized according to the type of diabetes. Type one and type two diabetes include some early signs, and symptoms and they are as follows:

* The food which we intake is converted to glucose that is used by our body cell for energy but insulin is needed to intake the glucose. When our body stops making enough insulin or our body cells resist making insulin then glucose is resisted to enter into cells and no energy is supplied to our body. Lesser energy will cause hunger, and fatigue in individuals, and this is an early sign of diabetes.
* The change in levels of fluid in our body makes eye lenses swell, and the shape changes resulting in the blurred vision, and an individual can focus on things.
* Yeast infection is also a symptom and both men, and women can suffer from this, while yeast infection is identified by checking between the fingers and toes, and under breasts.
* One of the early signs can be gain or loss in weight.

**Insulin**

Insulin is a chemical messenger, that is important to stay alive and the pancreas makes a hormone named the insulin which allows our body to use glucose from food which we intake to gain, and store energy. The food which we intake consists of the carbohydrates and this is the source from which sugar/glucose is taken to the body. Energy is the basic requirement of the body cells and after food intake; the beta cells are signals to produce insulin to the bloodstreams. Insulin is the key, which unlocks cells to allow glucose so that glucose would enter a cell. If the pancreas releases less insulin, then diabetes will develop resulting in higher amounts of glucose levels in the blood. The islets in our body are attacked by the immune system, which ceases the production of insulin, and it is not produced enough in the body. After this cease of islets, the glucose in our blood stays, and the cells do not absorb leading to failure in conversion of the glucose into the energy, which is required by our body.

**Insulin production by the pancreas**

To control the glucose, homeostasis the adequate amount of insulin is produced by the pancreatic beta cells. A person with the disease of obesity, the insulin is produced in a deficit amount, and it is supposed that there will be lesser secretion capacity of the pancreas (Alarcon et al.). The pancreas is that detector which, when there is a rise in glucose levels in our blood, controls the levels by secreting the insulin to absorb the glucose in the blood.

The glucose level is controlled by the insulin and allows to pass blood across cell membranes, and to the body cells. The energy absorbed by the cells is stored in the liver, muscular cells in the form of glycogen. This results in a decrease in the sugar level in our blood, and this decrease triggers the pancreas to stop releasing the insulin farther.

**Diabetes and pancreatic functions**

For our body mechanism, the pancreas plays an important role, especially in the endocrine and exocrine system. The endocrine systems consist of those body organs which produce the hormones, chemicals, and these chemicals are sent to the blood which helps in the regulation of mood patterns, growth, reproduction and the metabolism of our body. The exocrine consists of glands responsible for the release if the sweat, saliva and digestive enzymes in the pancreas.

The pancreas is responsible to produce insulin in our body and the beta-cell are responsible for the production of insulin. Beta cells are divided into groups inside the pancreas, which are named as the islets of Langerhans. The insulin regulates sugar in our blood, which assists the transportation of sugar from the blood to the cells.

 The pancreas is linked with diabetes because insulin is produced by the pancreas which controls the higher levels of sugar in the blood and this can be a problem of the pancreas.

 *Type 1 and pancreas*

 In type one diabetes the beta cells are attacked by the immune of our body when beta cells are attacked more, then the pancreas starts producing a little amount of insulin to keep balance in the sugar levels, while this is the time when the symptoms of diabetes start appearing in people. However, our body still keeps producing the little amount of insulin after years.

 *Type 2 and pancreas*

Insulin is resisted by our body immune, while the pancreas can still release the hormones to the body but body cells fail to use these hormones effectively. When there is no sufficient amount of insulin in our body then, diabetes is developed while the beta cells are damaged.

The pancreas is responsible to release the insulin in our cells to control and balance the higher levels of the glucose/sugar. But the beta cells get attacked and the insulin is resisted to control the higher level of sugar which results in the slow functioning of the pancreas and this leads to diabetes in people. Symptoms for diabetes can be identified before it takes too long to treat people in the initial levels of diabetes.

**Works Cited**

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