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Insulin Produced by Undergoing Genetic Engineering

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INTRODUCTION

Human insulin is used to control blood sugar in people who have type 1 diabetes (condition in which the body does not make insulin and therefore cannot control the amount of sugar in the blood) or in people who have type 2 diabetes condition in which the blood sugar is too high because the body does not produce. Insulin is a hormone created by your pancreas that controls the amount of glucose in your bloodstream at any given moment. It also helps store glucose in your liver, fat, and muscles. Finally, it regulates your body's metabolism of carbohydrates, fats, and proteins. Sound important? That's because it is. Without proper insulin function, your body can't store glucose in your muscles or liver, but neither can it make any fat.

DESCRIPTION

Instead, the fat breaks down and produces, among other things, keto acids, endocrinologist Hirsh, MD. If the levels of these acids grow too high, the imbalance can trigger diabetic ketoacidosis, a potentially fatal condition. When you eat, your blood glucose levels rise, and this leads a typical person's pancreas to release insulin, so that the sugar can be stored as energy for later use. Without that pancreatic ability, as a person with either type 1 diabetes or advanced type 2 diabetes, your blood sugar levels may rise dangerously high, or drop too low. Insulin is a peptide hormone produced by beta cells of the pancreatic islets encoded in humans by the INS gene. It is considered to be the main anabolic hormone of the body. It regulates the metabolism of carbohydrates, fats and protein by promoting the absorption of glucose from the blood into liver, fat and skeletal muscle cells. In these tissues the absorbed glucose is converted into either glycogen *via* glycogenesis or fats (triglycerides) *via* lipogenesis, or, in the case of the liver, into both. Glucose production and secretion by the liver is strongly inhibited by high concentrations of insulin in the blood. Circulating insulin also affects the synthesis of proteins in a wide variety of tissues. It is therefore an anabolic hormone, promoting the conversion of small molecules in the blood into large molecules inside the cells. Low insulin levels in the blood have the opposite effect by promoting widespread catabolism, especially of reserve body fat.

CONCLUSION

Beta cells are sensitive to blood sugar levels so that they secrete insulin into the blood in response to high level of glucose, and inhibit secretion of insulin when glucose levels are low. Insulin enhances glucose uptake and metabolism in the cells, thereby reducing blood sugar level. Their neighbouring alpha cells, by taking their cues from the beta cells, secrete glucagon into the blood in the opposite manner: The increased secretion when blood glucose is low and decreased secretion when glucose concentrations are high. Glucagon increases blood glucose level by stimulating glycogenolysis and the gluconeogenesis in the liver. The secretion of insulin and glucagon into the blood in response to the blood glucose concentration is the primary mechanism of glucose homeostasis.

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