

What is insulin?

Our human body is a masterpiece of nature. It is plenty of different organs, bones, tissues, cells. Everything has certain way of function and use. Cells are the smallest and basic unit in our organism. For example, beta cells. They are found in pancreatic islets in pancreas. Their main function is releasing insulin. Insulin is a human hormone, which plays the main part during blood glucose regulation. A lack of it can develop inability to identify it, which leads to diabetes. The hyperinsulinemia, the excess of insulin can lead the death.

In far 1869 the medicine student from Berlin- Paul Langerhans found a cells collection in pancreas. Those unknown cells were called after the founder- the Langerhans islets. This was the start of investigating the insulin.

Then in 1901 Eugene Opie discovered that those islets produce special hormones and that the breakdown of those islets lead to some diseases, including diabetes, because the glucose regulation cannot be stable without these Langerhans islets.

For a long time, the developing of these investigations are prevented by the World War I. The grandiose continuation happened when in 1921 Dr. Frederick Banting and his student Charles Best demonstrated the experiment on the dog's pancreas, it showed the symptoms of diabetes. They injected the medicine contained those hormones and the dog had no symptoms of diabetes. After this, another experiment was done with a cow. Also more observations helped to know how to treat the hyperglycemia, low sugar level in blood. And now this medicine was ready to be tried on humans. The first one was a 14 year old Leonard Thompson, who had type 1 diabetes. He was injected extra insulin hormones. Leonard had lived for 13 years more. And after this successful result, Banting and Best were getting letters asking for help. For this new method of treating the diabetes all the scientists were given a Nobel prize.

In 1950 the Danish pharmaceutical company Novo Nordisk started selling NPH, the immediate acting insulin.

13 years later, insulin becomes the first human protein, which was chemically synthesized in that time.

1985 -was the year when Novo Nordisk company introduced the insulin pen delivery system. And after this, inhalers and pumps were marketed by various pharmaceutical companies.

In 2000 470 patients who struggled with high sugar level had been transplanted the hormones for next 5 years. And then they could be free from the insulin injections, if they would take immunosuppressant drugs regularly to stable the sugar level.

And in 2015 the doctor Edward Damiano invented the device, which is basically the bionic pancreas, delivering both glucagon and insulin every five minutes to make the equal number of them in the blood. And this medical device was easy to keep in the pocket

I decided to choose this topic of medicine because I was curious about what insulin particularly was and through searching for data, I found out so much new about diabetes and insulin's influence on its treatment. The easy and effective way of treatment the diabetes through the devices had developed from the discovering of the small proteins in the pancreas. A large number of the scientists, doctors and patients participated in the revolutionizing this sphere of medicine.

