

Diabetes and The Insulin Pill

Diabetes is a chronic disease that has no cure right now. There are three types of diabetes: type 1, type 2, and gestational diabetes. Type 1 diabetes occurs when the pancreas no longer produces insulin; about 10 percent of people with diabetes have type 1. Type 2 diabetes occurs when the pancreas does not produce enough insulin or when the body does not effectively use the insulin that is produced; about 90 percent of people with diabetes have type 2. Gestational Diabetes is a temporary condition that occurs during pregnancy. It affects about 3.5 percent of all pregnancies and involves an increased risk of diabetes developing in both the mother and child. Risk factors for developing diabetes includes being age 40 or older, overweight, someone in a high risk ethnic group (Africans, Asians, South-Asians, and Hispanics). The risk also climbs if you have relatives with the disease, have high blood pressure, and also high cholesterol. There are signs for diabetes such as unusual thirst, frequent urination, weight change, lack of energy, blurry vision, and frequent infections.

Insulin is a hormone produced in the pancreas. Insulin is necessary to move sugar from the blood to other body tissues where it is needed for energy. Insulin also helps the body to process carbohydrates, fats, and proteins from the diet. In a person with diabetes, the pancreas does not produce enough insulin for the body's needs, so additional insulin is required. It must be injected because stomach acid would

destroy it if taken by mouth. Insulin controls, but does not cure, diabetes. It must be taken regularly. People with diabetes gradually develop serious nerve, blood vessel, kidney, and eye problems, especially if the diabetes is not controlled properly.

A breakthrough is occurring in the field of diabetes with the discovery of the insulin pill. Purdue University Researchers have developed a pill that has a polymer to encase in insulin, allowing it to pass through the stomach. The polymer protects the insulin until it reaches the small intestine, where it can be absorbed into the blood without being destroyed along the way by the enzymes and acids in the mouth, throat and stomach. Purdue researchers have tested the polymer on 150 rats and dogs. They found that 16 percent of the insulin made it to the bloodstream. Although that number is not that high, it is far better than previous experiments. Researchers are now in phase II and phase III studies and hope to be able to have the pill approved by the FDA by the end of the decade.

Sources:

1. <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a682611.html>
2. <http://www.diabetes.ca/Section/About/thefacts.asp>
3. <http://www.nurseweek.com/news/01-09/904insulin.html>