

What on Earth is Diabetes?

from Celebrating Chemistry



Diabetes is a disease that is becoming more and more common. People who have diabetes are not able to use the energy from the foods they eat. Currently, over 18 million people in the United States have diabetes, and that number is growing. During digestion, the sugars in the food you eat are changed into glucose and other simple sugars. Glucose is the fuel that your body uses to make your muscles and other body parts do work. Once your food is changed into glucose, it passes through the lining of your stomach and small intestine into your bloodstream, but your body won't use it right away. First, your body must be told to use the glucose by a hormone called insulin.

Your pancreas, a small organ located just above your belly button, makes and controls insulin. After you eat and glucose goes into your bloodstream, your pancreas releases insulin. The insulin causes your body

to use the glucose in your blood for energy, and you are able to do all the things that you would like to do. If a person's pancreas doesn't make enough insulin, that person's body cannot properly use the glucose from the food they eat. These people have diabetes.

People with diabetes must watch what they eat very carefully, to make sure that the amount of glucose in their blood does not get too high. From time to time they use a small machine to measure the amount of glucose in their blood. If there is too much glucose, they may have to give themselves a shot of insulin. Others may use an insulin pump, which is a small device that automatically injects insulin into their bloodstream.

There are two types of diabetes: **type 1**, and **type 2**. Type 1 diabetes is rare. It is caused by damage to the part of the pancreas that makes insulin. Because people with type 1 diabetes do not make any insulin,

they must take a shot of it after each meal. Guessing the right amount of insulin can be very tricky. In type 2 diabetes, a person's pancreas still makes insulin, but either it does not make enough, or their body does not respond to the insulin the way that it should. Some people with type 2 diabetes can control their disease by watching what they eat, exercising, and losing weight. Others take one or more daily medications, sometimes including insulin.

There is no cure for diabetes, but many people are trying to find one. Chemists, biologists, molecular engineers, and physicians are all working together to put an end to the disease. But until a cure can be found, the best ways to prevent diabetes are to eat a proper diet and to exercise.

