

# Type 1 diabetes



Many of us know someone with diabetes but most of us don't know what the disease is. Well, diabetes is when your body makes too much or too little insulin. Type one (juvenile/insulin dependent) diabetes is when your body does not make any insulin. The world is still looking for a cure. Type one diabetes is a condition in which the patient has high blood glucose levels that are caused by an extreme lack of insulin. This is caused when the body's immune system attacks the insulin-producing cells and destroys them. You need insulin to move the glucose, a sugar found in food, to the cells where they use it as energy. Insulin acts as a key allowing the glucose to get into the "locked door" the cells. This disease is most often found in Caucasians and is diagnosed in young individuals (12 and under). The individual with diabetes usually has a genetic predisposition to get this disease and the disease will continue to be passed on through generations. The symptoms of type one diabetes include losing weight rapidly, being very tired and hungry, dehydration, and vomiting. This type of diabetes can be treated with insulin shots or by using an insulin pump. It is monitored by a finger stick glucose test which is done around two to three times a day, and also blood tests, urine tests, foot and skin exams, and eye exams. In addition to insulin, individuals need to exercise and follow a healthy eating plan. There are many complications to this disease including arteriosclerosis (impaired blood circulation), strokes, low blood pressure, bacterial infections of the skin, damage to the kidneys that will lead to kidney failure, fungal infections, damage to nerves, blindness, and many other infections. Coma or death may also occur. Insulin was discovered in 1921 by two young Canadians working in a laboratory. There are more than twenty different kinds of insulin and all must be injected. Insulin shots are very important in preventing a dangerous

condition called ketosis. Ketosis is caused when glucose and acids reach a harmful level in the body. Before January 2006 insulin was taken from cows and pigs or manufactured in labs. Beef and pork insulin have been taken off the market in the United States. The insulin created in labs are composed from yeast and bacteria. The human gene is put in the yeast or bacteria so that it can be cloned and/or multiplied. Diabetes has been a killer for long enough. The symptoms of severe cases of diabetes were described accurately in the writings of the ancient Egyptians, Indians and Greeks. It is the sixth cause of death in America. Finding a cure has been no easy task. Mary Tyler Moore was right that science is getting close. Researchers have discovered that bone marrow has helped to repair beta cells in mice with diabetes and has also halted the kidney failure as a result from diabetes. This sounds extremely promising to them because it was human bone marrow used in the mice so their hope is that it may have a strong likelihood to treat it in humans. Another research team has developed the Paradigm wireless management system or the "smart pump." This product is not yet FDA approved and is currently being tested among children and adults both with type one diabetes. The system takes the math out of meal times that children simply can not do. Before people had to calculate their insulin to carbohydrate ratios. This is enormously helpful since most of the patients are children. It eliminates human error and gives them more freedom to do the things people without diabetes take for granted. Soon along with the smart pump they hope to develop a sensor that is placed under the person's skin that will read their blood sugar levels and send it to the pump automatically. Most diabetic patients in fact die in their sleep because they don't know they are running low on their blood sugar and pass out never to awake. With only

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discovering the cause and treatment of diabetes in the 1920's medical science has been quick to respond to find a cure and an easier way to administer insulin to its patients. I am confident that someday soon we will have our type one diabetes cure and can move onto other life-threatening illnesses and find a cure for those.