Diabetes Essay, Research Paper

Diabetes: Types 1 and 2

By: Sharif Elshinnawi

It is our fourth leading cause of death by disease and the leading cause of new cases of kidney disease, blindness, amputation, and impotence. It is diabetes. Diabetes is a chronic disease in which the body does not make, or does not properly use insulin. Insulin is the hormone that helps your body use the energy from sugar, starches and other foods. Glucose, a form of sugar produced when the body digests carbohydrates, is the body s major fuel for the energy it needs. When insulin is absent or ineffective, the blood glucose levels can lead to both short and long-term problems. Type I diabetes is caused by the destruction of the body s insulin-producing cells. Type II diabetes has several causes. Heredity, age, and weight are involved. Most people with Type II diabetes make enough insulin, but are not able to use it properly. About 13 million Americans have diabetes, but only 6.5 million know they have it and are getting treatment.

About 10% of people with diabetes have Type I. Type I diabetes, which used to be known as Insulin-Dependent Diabetes Mellitus, is when the body produces little or no insulin. Type I can occur at any age, though it develops most often in children and young adults. The risk of getting diabetes when you have no diabetes in the family is 0.3%, 36.0% when you have an identical twin with Type I, and 3.0% when you have one parent with Type I or a sibling with Type I. The physical signs of Type I diabetes include frequent urination, extreme hunger and thirst, weight loss, and weakness and tiredness. People with diabetes should follow certain guidelines in order to keep their diabetes manageable and stable. Blood glucose testing, daily insulin injections, meal planning, and exercises are some of the most basic and important ways to treat Type I diabetes.

The remaining 90% of people with diabetes have Type II, which was known as Non-Insulin Dependent. In Type II diabetes, the body still produces insulin. However, the produced insulin is either not effective, or is not enough to control blood glucose. Type II usually develops slowly and most people with this type of diabetes are overweight and over 40 years old. Having no diabetes in your family gives you a 14.0% chance of getting Type II. If you have an identical twin with Type II diabetes, you have a 100% chance of having Type II diabetes. A 20-30% risk is present to those with one parent with Type II diabetes, while a 35-55% risk is present to those with both parents sick with the disease. The physical signs of this type of diabetes include feeling tired, blurred vision, dry, itchy skin, increased hunger and thirst, increased urination, tingling or loss of feeling in hands or feet, and non-healing infections of skin, vagina, and/or bladder, and vaginal yeast infections. The essential treatment plan used to manage Type II diabetes consists of blood glucose testing, taking oral medication, meal planning, exercise, and weight maintenance.

When blood glucose levels drop low, you get hypoglycemia, also called an insulin reaction. The injection or intake of too much insulin, unusual exercise or activity, and/or the skipping or delaying of meals and snacks causes hypoglycemia. Signs of an insulin reaction are slurred speech, headache, tingling of lips, sweating (cool), rapid heartbeat, confusion or disorientation, weakness, hunger, nervousness, coma, and tremors. To treat hypoglycemia, 3 glucose tablets, 1 tube of glucose gel, 4 oz of juice, 1 tbsp of honey, 8 oz of milk, or 6 hard candies can be consumed. If a diabetic with hypoglycemia goes unconscious, glucagon (a medication to raise glucose) may be injected.

There are times where a blood glucose level is at a level above normal. This condition, hyperglycemia, can occur rapidly and without any symptoms. Hyperglycemia is caused by too little insulin or oral medication, too much food, less activity or exercise than usual, more stress than usual, infection, illness or injury. Symptoms to recognize hyperglycemia include; fatigue, dry mouth, increased thirst and/or hunger, blurry vision unexplained weight loss, and increased urination. To treat hyperglycemia, one should check their blood glucose more frequently than usual, check for urine ketones, take their insulin or oral agent as prescribed, and to follow their meal and exercise plan as prescribed.

Ketones are the acids or toxins produced when blood glucose rises in the absence of insulin. Large amounts of ketones in the blood can cause a life threatening problem called diabetic ketoacidosis (DKA). Ketoacidosis occurs most often in Type I diabetes. It is rarely a problem for people with Type II diabetes, as they still produce some insulin. Symptoms of DKA are increased thirst and urination, nausea, vomiting, and/or stomach pains, changes in or difficulty breathing, acid or fruity smell on breath, flushing, dehydration, passing out, and fatigue. If a diabetic has DKA, it is critical that their blood glucose is checked and recorded every 2 hours, their doctor is called immediately if blood glucose and ketones are unable to reach normal level. Also, exercise should be avoided until ketones disappear. Insulin should be taken, and more insulin may be prescribed.

People with diabetes are living longer, more productive lives than ever before. Yet the longer someone lives with diabetes, the greater the chance they have of developing long-term complications. The primary factor that contributes to long-term diabetes complications is a life with diabetes full of high blood glucose levels. High blood glucose levels damage both small and large blood vessels. High blood glucose levels also cause the inside wall of the blood vessel to thicken. Over a period of time the small vessels of the eyes, kidneys and nerves, and the large vessels leading to the heart, head, arms and legs can become so damaged that oxygen and other nutrients cannot reach the areas in need. Long-term difficulties include heart attack and stroke, impaired vision and blindness, decreased circulation, foot problems and amputations, nerve problems, kidney disease, frequent infections, and sexual problems. All of that could be prevented with good blood glucose control and efficient management of diabetes.

In the modern world of medicine today, scientific researchers are coming up with fascinating, innovative treatments to reassure diabetics that a cure is near. In a few months, a laser blood glucose meter will put an end to the frequent and painful pricking method used to test the blood glucose level. Breakthroughs in the research for a cure for diabetes can be presented in lists. Although there are two of the most important ones, islet cell transplants, and the cloning of the pancreas/islet cells. Researchers say to give everything about 5 years and there will be a cure. Many diabetics are living healthy, fulfilled lives and are hopeful and awaiting their cure.