

Diabetes and Glucose Monitoring

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What is diabetes? It is a condition where the body is unable to regulate the amount of glucose in the blood due to lack of insulin or the body's inability to produce insulin. In simple terms, diabetes is a condition where there is too much sugar in the blood.

There are two main types of diabetes, the first is Type 1 and the second is Type 2. What is the difference? Type 1 diabetes also known as "juvenile diabetes" or "insulin dependent diabetes" is more common in children or young adults. Type 1 diabetes is an autoimmune disease where the body is destroying the cells of the pancreas, the organ that produces insulin. Insulin is necessary for the control of blood glucose. Type 1 diabetics must take insulin shots daily due to the lack of insulin being produced by the body. Type 2 diabetes is commonly referred to as "non-insulin dependent diabetes." Adults are mostly diagnosed with this type of diabetes but it is becoming more popular among obese children. This is different from type 1 diabetes because the pancreas is still producing insulin however it is not enough to control the glucose level. This type of diabetes can be regulated through exercise, diet and medication and type 2 diabetes may not need to take insulin shots daily.

A crucial part to every diabetic's life is blood glucose monitoring. This is a way of checking the concentration of the glucose in the blood, to tell the diabetic if their blood sugar is high or low and determines the amount of insulin needed. Each day most diabetics test 3 to 8 times a day depending on the severity and type of diabetes they have. By monitoring their blood sugar levels regularly, diabetics are able to see how diet, exercise and insulin affect their levels. How do diabetics check their blood glucose level? They use a Glucometer, which is able to detect the amount of glucose in the blood that is placed on the strip, which is interfaced with the Glucometer. To draw blood, most diabetics prick the tips of their fingers, which can be painful; therefore there have been many advances in glucose monitoring.

Some advances include noninvasive, semi-invasive, continuous, surgical and laser monitoring systems. Examples of such advances include, the GlucoWatch, the REAL-Time Continuous Glucose

Monitoring System, the HypoMon®, and the Cell Robotics' Lasset. These advances provide less painful monitoring as well as more advanced technology to help the diabetic see patterns in their daily lives. These advances make the lives of diabetics much easier and less painful.

Monitoring Blood Glucose has benefits. Being able to keep blood glucose levels close to normal, results in fewer or even no complication and a normal life span for the diabetic. There are short-term as well as long-term benefits the diabetic can have. Some short-term benefits include feeling better, having more energy and reducing the risk of hypoglycemia and hyperglycemia. Long-term benefits include better quality of life due to a healthier life and less of a chance of having eye, heart and kidney disease as well as other physical problems.

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