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## **Type 1 Diabetes Mellitus**

What is Type 1 Diabetes Mellitus? Let me start by saying that Diabetes Mellitus, once was called juvenile diabetes, is a chronic health condition where your body does not produce enough insulin causing you to have high blood sugar called glucose. You ask yourself what glucose is? Glucose is the body's main source of energy, and it comes from the food you consume. We have two types of hormones that we produce, insulin and glucagon. Glucagon works with insulin by controlling your blood glucose levels. Insulin is made by your pancreas. Insulin helps by letting glucose in your blood enter cells to be used by energy. Our immune system fights infections and such as it destroys the cells in the pancreas that make up insulin. Therefore, our pancreas will stop from making insulin. Without insulin, glucose cannot get into the bloodstream and your blood glucose will be high. As a result, people with Type 1 Diabetes need to administer insulin for life.

## **Diagnosis**

To be diagnosed with Type 1 Diabetes Mellitus there are a few tests that are done to determine your diagnosis. A Hemoglobin A1c or a fasting blood sugar test. One of the main ones

is Hemoglobin A1c, this type of test measures an average blood sugar for the past two to three months. The percentage measured is that of the blood sugar attached by the oxygen carrying protein in erythrocytes (hemoglobin). No, you do not need to be fasting for this type of test, it can be done at any time of the day. Normal Hemoglobin A1c is below 5.7%. Anything higher than 6.5% is considered diabetic once the test is performed more than twice in a year. Once your A1c is determined your primary doctor will have a goal of where your A1c should be regarding your age and medical history. Your care plan will be written out based on that percentage and treatment can begin.

## **Signs and Symptoms**

There are several signs and symptoms to look out for in Type 1 Diabetes. They can develop suddenly or over months. That includes polydipsia (excessive thirst), polyuria (frequent urination), bed-wetting, polyphagia (extreme hunger), unintended weight loss, irritability or mood changes, fatigue or weakness and blurred vision. If unnoticed it can be fatal and lead to severe health problems. Such as neuropathy (nerve damage), nephropathy (kidney damage), heart and blood vessel disease, eye, and foot damage, skin, and mouth conditions. In females, if pregnant and uncontrolled, complications can be severe like miscarriage, birth defects, or the mother can have diabetic ketoacidosis. Signs and symptoms to look out for diabetic ketoacidosis are fruity smell, flushed skin, nausea, or vomiting, having trouble breathing, stomach pains, and feeling confused. So, if you think you have any of these symptoms mentioned above, contact your doctor or head to the emergency room. A simple blood test can determine if you have Diabetes Mellitus.

## **Treatment**

Treatment for Type 1 Diabetic consists of frequent blood sugar monitoring, carbohydrate, fat, and protein watching, healthy diet lifestyle, exercising to maintain healthy weight and most importantly taking insulin. It is said that insulin is based on how fast and how long it works in your body. Terms your primary care physician will look at is onset – how quickly insulin lowers your blood sugar. Peak time – when insulin is at its maximum strength and duration – how long insulin works to lower your blood sugar. As mentioned before, insulin will be determined based on your age, how well you are able to manage your blood sugar, how active you are, the food you eat, and how long your body takes to absorb insulin and the duration it stays active. Mind you this will be different for many people. There are insulins such as short acting which is considered regular insulin, rapid acting, intermediate acting, and long acting. Some examples of rapid acting are Humalog and Novolog. Long acting consists of Lantus and Toujeo. Once the insulin is decided administration will be either through an injection or an insulin pump. Based upon the insulin of choose you will also be checking and recording your own blood sugar at home at least four times a day. An injection will be administered with either a fine needle or a refillable pen injected underneath your skin. An insulin pump is about the size of an iPod. The pump is placed either on your abdomen, lower back, leg, or arm. The pump has a tiny catheter that is inserted under the skin. The programming can be done wirelessly. They are programmed to dispense the amount of insulin that needs to be administered based on your blood sugar level and how many carbohydrates you consumed. Research has shown that an insulin pump is more effective at controlling your blood sugar levels than injections. I feel that with the pump you have better control of how much insulin is administered compared to an injection.

### **Risk Factors**

Risk factors for Type 1 Diabetes include genes and family history. It runs in families and most often in Hispanics and Africans. Diabetes can appear at any age. But, more so in children between four and seven years old or less than two years old. In adults, it is more prevalent in smokers, overweight or obese individuals, those with high blood pressure and high cholesterol.

### **Patient Teaching**

Once you have been diagnosed and you have been informed about your condition, treatment, and risk factors. You will have questions as to what you can eat, how to use your insulin, how to check blood sugar at home, and what are the signs of complications. Your primary care physician can refer you to Diabetic Management. Diabetic Management will help manage your diabetes and how to take care of yourself. They will help you by knowing when and how to take your medications, will teach you how to use a glucose monitor, help reduce complications risks and balance your diet. It may sound overwhelming, but Diabetic Managements can make it easier for you.

### **Conclusion**

In conclusion, Diabetes is the seventh leading cause of death in the United States. It is the number 1 cause of kidney failure, lower-limb amputations, and adult blindness. There is no cure for Type 1 Diabetes Mellitus, however it can be manageable with the right education and the right materials.

## Citation

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