Diabetes in Adults with Down Syndrome
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**Diabetes mellitus (DM)** is a disease marked by the inability of the body to regulate sugars through insulin. Either the body does not produce enough insulin in the pancreas to help the body absorb sugars or the cells in the body are not sensitive to the insulin being produced.

**Type 1 diabetes** is typically diagnosed in childhood and the hallmark of the disease is the decreased production of insulin by the pancreas. People with Down syndrome (DS) are more often diagnosed with endocrine disorders than people in the general population and type 1 DM is an endocrine disorder. People with DS are also more commonly diagnosed with autoimmune disorders (in which the body’s immune system attacks parts of its own body) and type 1 DM is an autoimmune disorder.

**Type 2 diabetes** is related to increased resistance to insulin and is often associated with obesity. It is more commonly diagnosed in adults (in the general population) but it is now being seen in children as well. Some studies suggest type 2 DM may be more common and/or occur at a younger age in people with DS.

For caretakers of people with DS, **signs and symptoms** of diabetes to watch for are: increased urination, increased thirst, abnormal weight loss, fatigue, vision changes, nausea, vomiting, diarrhea, fainting, and abdominal pain. These symptoms are often caused by excessively high sugars in the body. If the symptoms are severe, the person should be evaluated in the emergency room. If you notice symptoms but they are not life-threatening, the person can be seen at a doctor’s office and diagnosed with blood tests.

Once diagnosed, the key is to **treat** and **control** the blood sugar so that it is at a normal level. With type 1 DM, the main method of treatment is to provide insulin that the body is not producing. This is done with injections. Depending on the type of insulin and dietary needs of the person, different frequencies of checks and injections of insulin are needed. Insulin injections can be performed manually. Alternatively, insulin pumps can be used to monitor the person’s blood sugar and administer dosages of insulin.
With type 2 DM, since the body is still producing insulin, there are more methods to help control the patient’s blood sugar. Oral medications can decrease the amount of sugar produced by the body from the body stores, reduce the absorption of sugars from eating, increase the uptake of sugar by cells, stimulate the body to produce more insulin, or even tell the kidney to excrete extra sugars. Individuals whose blood sugars aren’t adequately controlled by oral medications can be started on insulin like people with type 1 DM.

The biggest risk of diabetes medications, including many oral and injected medications, is hypoglycemia, which is when the sugar level in the body is dangerously low. When their sugars are low, individuals can seem confused, hungry, dizzy, weak, or have other symptoms. That’s why careful monitoring of the blood sugar is needed. Particularly in type 1 DM, daily monitoring of the sugar needs to be done by poking the finger with a needle and drawing a drop of blood on a glucose strip for a glucometer. Some people may need to check their sugar three times a day with meals. Long-term monitoring of blood sugar can be done with a lab test called a hemoglobin A1C which shows the average blood sugar for approximately the past three months.

Due to the complexity of checking sugar levels and administering medications with potential side effects, most adults with DS will require some assistance with the process. However, over time and with practice, some individuals with DS can perform some aspects of it themselves.

**Diet and exercise** are very important aspects of controlling diabetes. Everything that a person eats contributes to the nutrients as well as sugars in the body. Therefore, it is a good idea for adults with DS and DM to be seen by a nutritionist or diabetic educator to learn about foods they should eat to control their diabetes. Exercise and activity can also help regulate the sugar level so it is good to stay active with daily exercises.

**Long term complications** of uncontrolled diabetes include damage to the eye, peripheral nerves, kidney, and blood vessels in general. In uncontrolled diabetes, all the free sugar floating in the blood sticks to small nerves and blood vessels causing inflammation and damage. People with diabetes should have annual eye exams by an eye specialist to check for cataracts and retinal damage. When the damage is done to the peripheral nerves such as the ones in the feet, a condition called neuropathy can occur which can cause a burning sensation or general numbness. In this situation, damage and infection to the feet may not be noticed which can lead to more dangerous infections. Individuals with DM should have daily inspections of their feet and regular exams by a clinician. All these symptoms are reasons why diabetes should be monitored and controlled carefully.

*This is just a brief overview of diabetes. For more information, please discuss with your primary care health care provider or endocrinologist.*