

Appendix 12: Basic Diabetes Information

What is diabetes?

Diabetes is a lifelong disease that occurs when the body cannot use its blood glucose. When you eat or drink carbohydrates they get turned into glucose (sugar) in your stomach. The increased glucose in the blood stream causes the pancreas to release insulin. The insulin helps bring the glucose into the cells so that it can be used for energy. Glucose is the energy that our cells need. If the insulin is not available the glucose cannot enter the cells and stays in the blood stream. When someone has diabetes, their blood glucose levels become too high. The insulin is referred to as the “key” that unlocks the door to our cells and lets the blood glucose in. See **Appendix 13** for a diagram that shows how this process works.

Additionally, when the glucose is not able to get into the cell and stays in the blood stream, it will get taken to the kidneys. The kidneys’ role is to filter the blood and produce urine. The urine that is produced will carry the glucose out of the body. This can leave a person feeling weak and tired because they have just peed out all of the energy from the food they have eaten.

There are three main types of diabetes; type 1 diabetes, type 2 diabetes and gestational diabetes. In addition, there is also a term called prediabetes.

Prediabetes refers to a condition where a person’s blood glucose levels are higher than normal, but not yet high enough to be diagnosed as type 2 diabetes. Prediabetes can act as a warning that you are at increased risk of developing type 2 diabetes. The good news is that not all people with prediabetes will develop type 2 diabetes. Lifestyle changes including moderate weight loss, healthy eating and regular physical activity have been shown to be highly effective in delaying or preventing the onset of diabetes.

However, many people have prediabetes and don’t know it. Encourage people in your community to get screened for diabetes and take actions to prevent and delay diabetes by achieving and maintaining a healthy weight, eating healthy foods and being physically active. Losing even a modest amount of weight, such as 5-10% of total body weight can make a huge impact on your health and the quality of your life.

People with diabetes can go on to live a long and healthy life if they manage their diabetes properly.

Type 1 diabetes, is usually diagnosed in children and adolescents. It occurs when the pancreas is unable to make insulin. People with type 1 diabetes must take insulin injections for the rest of their lives. Insulin is a hormone that controls the amount of glucose in the blood. Approximately 10% of people with diabetes have type 1 diabetes.

Type 2 diabetes occurs in about 90% of people with diabetes. In this situation the pancreas does not make enough insulin or the body does not effectively use the insulin that is made. Type 2 diabetes usually develops in adulthood, although more and more children and especially Aboriginal children are being diagnosed with type 2 diabetes.

Diabetes risk factors:

- Being over 40 years of age
- Having a parent or sibling with type 2 diabetes
- Being Aboriginal
- History of impaired glucose tolerance or impaired fasting glucose
- Having heart disease
- A history of gestational diabetes or prediabetes
- Having had a large baby (over 9 lbs)
- Having high blood pressure
- Having high cholesterol
- Being overweight, especially around the middle
- Polycystic ovary syndrome
- Acanthosis nigricans (dirty neck syndrome)
- Schizophrenia

While we cannot change our age or our genetics, we can eat healthy and be active in order to help improve our weight, cholesterol levels and blood pressure. The purpose of the ADI program is to help teach people how to change these things so that they can decrease their risk of developing type 2 diabetes and its complications.

Up to 10% of the population may have type 2 diabetes and not know it. Someone living with undiagnosed type 2 diabetes is at an increased risk of developing complications because they are not monitoring and controlling their blood glucose levels. People over 40 years of age and older should be screened for diabetes every three years and more often and at a younger age for people at high risk of developing diabetes. As the ADI worker, you should encourage community members to be screened for diabetes by the nurse or doctor in your community.

Gestational diabetes is the third type of diabetes. It is a temporary condition that occurs during pregnancy. It affects about 8-18% of all pregnancies in Aboriginal women and involves an increased risk of developing type 2 diabetes for both mother and child.

Women should be screened for gestational diabetes between 24-28 weeks of pregnancy and earlier if the woman is at high risk.

Risk factors include:

- Having gestational diabetes with a previous pregnancy
- Previously given birth to a large baby (greater than 9 lbs)
- Being an Aboriginal woman
- Being overweight or obese
- Being 35 years of age or older

The risks for the mother if she develops gestational diabetes are:

- Difficult labour and delivery
- Increased chance of having a cesarean section
- Increased risk of developing type 2 diabetes

The risks for the baby if the mother develops gestational diabetes are:

- Delivering a large baby can make labour hard on the baby
- Having low blood glucose levels after being delivered
- Having trouble breathing after being delivered
- Gaining too much weight
- Being obese and developing type 2 diabetes later in life

It is important to note that the baby will not be born with diabetes.

Pregestational diabetes:

- The term pregestational diabetes refers to diabetes that was present before pregnancy.
- The number of women with pregestational diabetes has increased in the past 10 years, mostly because of the increase in type 2 diabetes.
- A woman who has diabetes should plan her pregnancy and it is best if she has good blood glucose control 3-6 months before planning to get pregnant.
- Most women do not know they are pregnant until the baby has been growing for up to 2-4 weeks.
- It is very important for a woman with pregestational diabetes to keep her blood glucose levels within a healthy range.

The risks for the mother if she has uncontrolled pregestational diabetes are:

- Pregnancy loss
- Increased chance of having a cesarean section delivery
- Worsening diabetes complications
- Greater risk of low blood glucose levels

The risks for the baby if the mother has uncontrolled pregestational diabetes are:

- Higher risk for birth defects
- Being a big baby
- Higher risk of premature birth and complications
- Greater risk for diabetes
- Greater risk of sickness and health problems

Why are First Nations people at higher risk of developing type 2 diabetes?

There are a couple factors that may contribute to the fact that First Nations people are at greater risk of developing diabetes such as modern lifestyle factors and genetics.

Lifestyle factors

In the past, people lived off the land to provide for themselves by hunting, gathering, gardening, fishing and trapping. They were more active when they travelled by walking, canoeing or using dog teams. They also had to chop their own wood for heat, haul their own water as well as tan their own hides and sew their own clothing. The food that people ate was from natural sources such as wild meats, fish, roots, plants and berries. Today, technology reduces the necessity of a lot of that physical activity and most diets have changed drastically. Most people eat a lot of processed foods such as candies, pop and chips that they buy from the grocery store. These are high in calories, fat, sugar and sodium (salt) and traditionally were not part of the diet. Most of us do not chop wood for heat or haul water, and spend many hours of the day sitting in front of a television or computer. These major lifestyle changes have contributed to the increase rate of type 2 diabetes.

Genetics

There are First Nations communities that have higher rates of type 2 diabetes due to a genetic factor that is found in some people. These individuals have one or both parents that have type 2 diabetes and most often were exposed to diabetes as an unborn child. Having a first degree relative, such as your mother, father, brother or sister with type 2 diabetes increases the risk of developing diabetes at an earlier age. High rates of obesity in pregnant Aboriginal women is associated with an increased risk of gestational diabetes and women giving birth to large babies. Further, these large babies have a greater risk of childhood, adolescent and adult obesity.

Therefore, it is very important for you as the ADI worker in your community to help young women make healthy lifestyle choices such as eating healthy and being physically active so that if they become pregnant they are not exposing their unborn child to greater risks of developing type 2 diabetes later in life.