

Diabetes - Introduction

Introduction

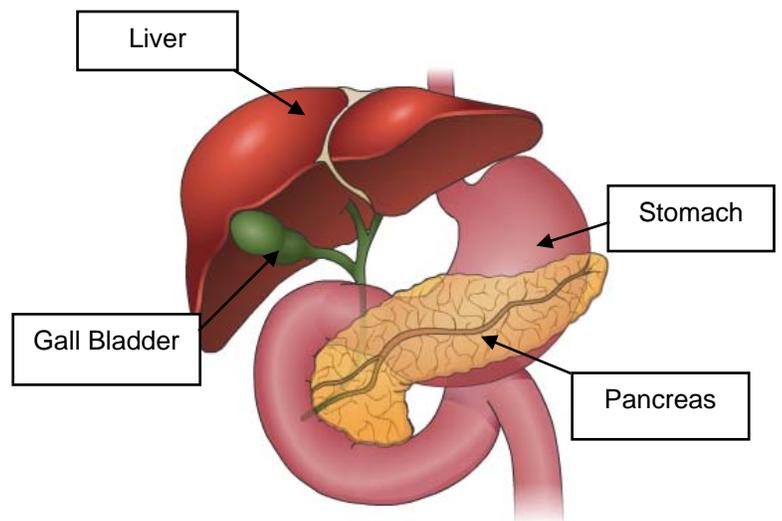
347 million people worldwide have diabetes. In 2004, an estimated 3.4 million people died from consequences of fasting high blood sugar. A similar number of deaths has been estimated for 2010. The World Health Organization (WHO) projects that diabetes will be the 7th leading cause of death in 2030. In the Middle East its has a high prevalence. Your health care provider may have informed you that you have diabetes. Although there is no known cure for diabetes, there are several treatments which can control this disease.

The success of any diabetes treatment depends largely on you, the patient. This reference summary will help you develop a better understanding of diabetes and how to control this disease.

What is Diabetes

The body is made of millions of cells that need energy to function. The food you eat is turned into sugar, called glucose. Glucose is carried to the cells through the blood stream. It is one of many substances needed by the cells to make energy.

For glucose to enter the cells, two conditions must be present. First, the cells should have enough “doors,” called receptors. Second, a hormone called insulin is needed to “unlock the receptors.” Once these two conditions are met, glucose enters the cell and is used by the cell to make energy. Without energy, all cells die.



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Insulin is a hormone, which is manufactured in the pancreas. Insulin levels in the blood vary with the amount of glucose present in the blood. Diabetes is a disease that makes it difficult for the cells of the body to get the glucose they need to make energy.

There are two ways in which diabetes can make it difficult for the cells of the body to receive adequate amounts of glucose. First, insulin may not be made by the pancreas.

Because insulin is needed to “unlock the receptors,” glucose cannot enter the cells. Therefore, glucose levels increase in the blood. This is known as Type 1 diabetes.

Type 2 diabetes occurs when insulin is present in enough quantities, but there is a decrease in the number of receptors on the cells to allow glucose to enter. Even though insulin is present, it cannot be used effectively, a situation called “Insulin Resistance” and results in high levels of glucose in the blood.

Type 2 diabetes is more common than Type 1. The exact causes of diabetes are unknown. However, it tends to run in families. Diabetes is not contagious.

Signs and Symptoms Of Diabetes

Diabetes is detected when your health care provider or nurse finds a high level of sugar in your blood or urine. The best time to test your blood sugar level is after you have gone for 8 hours without eating or drinking. This is known as a fasting blood sugar. A range for a normal fasting blood sugar is between 3.3 and 5.5 mmol/l (60 and 99 mg/dL). Levels between 5.6 to 6.9 mmol/l (100 and 125 mg/dL) are considered pre-diabetic.

Common signs and symptoms of diabetes include:

- Excessive thirst.
- Frequent urination.
- Excessive Hunger.
- Weight loss.
- Fatigue.
- Changes in vision.
- Slow-healing cuts or infections.
- Persistent itching of the skin.



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Treatment Options

Diabetes cannot be cured. It can, however, be controlled by keeping the level of glucose in the blood within its normal range. The treatment and management of diabetes varies from patient to patient. Your health care provider and diabetic care team will decide what form of treatment is best for you.

The success of your treatment depends largely on you. When you learn AND practice how to control your glucose level, you will enjoy a healthier life.

Controlling Diabetes

You can control diabetes by:

1. Eating right.
2. Exercising.
3. Monitoring your blood glucose level.
4. Taking prescribed medications.
5. Learning about diabetes.



Your dietitian or diabetes educator will explain to you how you can plan your meals and answer any questions you may have. The three goals of eating right are:

1. Controlling your weight
2. Keeping the level of blood glucose at normal levels, and
3. Reducing fat in the body.

A healthy diet may include changing what you eat, how much you eat, and how often you eat. However, you may be surprised by how many healthy and tasty food options you have.

Exercise helps people with diabetes in many ways. It lowers glucose levels, helps weight-loss, and maintains a healthy heart and circulation. In addition, exercising helps relieve stress and strengthens muscles. Your health care team will discuss your exercise plan with you. Always check with your health care team before starting a new exercise program.

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Blood glucose testing is important to find out if your blood glucose level is where it should be. If your blood glucose is too low or too high, you may need a change in your diabetes medication, diet, or exercise plan. If a change is needed, your health care provider or diabetic care team will give you instructions on what you should do.

Your blood glucose level is determined by testing a small drop of blood obtained from one of your fingers. This drop of blood is obtained by sticking your finger with a lancet. Blood glucose is usually checked one to four times each day, usually before meals. This can be done at home. Most people with diabetes become very competent at checking their own blood glucose.



Your diabetes educator will teach you how to test your blood glucose correctly and will tell you the times of day to do the tests. He or she will also teach you how to make changes in diabetes medication, diet, or exercise to help control your blood glucose. The diabetes educator will also review your blood glucose records and make any necessary changes in your therapy.

In cases of very high blood glucose levels that do not respond to diet and exercise plans, medications may be needed. Your health care provider will tell you if you need medications or insulin. If insulin is needed, it can only be injected. Insulin is needed for all patients with Type 1 diabetes and for some patients with Type 2 diabetes.

Blood glucose levels are very important to determine whether diabetes is controlled at the specific time the blood test is done. There is also another blood test known as Hemoglobin A1C. This blood test determines how well glucose has been controlled over the previous 3 months. A normal level in people who do not have diabetes is usually less than 5.7%.



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People with diabetes should try to maintain their Hemoglobin A1C around 7% or less as long as they don't have symptoms of hypoglycemia. A 7% level is equivalent to an estimated average blood sugar of 8.6 mmol/l (154 mg/dL). The lower the Hemoglobin A1C is, the less the chances of having complications from diabetes.

Estimated average glucose, or eAG, is a value derived from the A1C value using a formula.

Hyperglycemia (High Blood Sugar)

When controlling your diabetes, your blood glucose can become too high or too low. These conditions should be taken seriously. Fortunately, you can regain control of your blood glucose.

When too much sugar is in your blood, this condition is called hyperglycemia. Hyper is Greek and means "more." Glycemia is also Greek and means, "sugar in the blood." Hyperglycemia can be caused by eating too much food, eating sugary, sweet foods, or by not taking your medication. It can also happen when you are sick. If not treated, hyperglycemia can cause you to go into a coma.

Signs of high blood sugar, or hyperglycemia, include:

- Dry mouth.
- Thirst.
- Frequent urination.
- Blurry vision.
- Fatigue or drowsiness.
- Weight loss.



When you have high blood glucose, drink water or other sugar-free liquids. Check your blood glucose and stick to your diet plan. If your blood glucose remains high call your health care team. Your health care team will tell you what is considered high for you. If it is too high, you may need to go to the hospital.

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Hypoglycemia (Low Blood Sugar)

Hypoglycemia occurs when too little glucose is present in your blood. Hypo is Greek and means “less.” Hypoglycemia usually occurs with patients who take insulin or other medications. It can be caused by taking too much insulin. That is why it is also known as insulin shock. It can also be caused when you decrease your food intake or skip a meal, or when you exercise more than usual.

Signs of low blood sugar, or hypoglycemia, include:

- Sweating, shaking, nervousness.
- Hunger, dizziness, faintness.
- Pounding heart, personality change, confused thinking, impatience, crankiness.
- Numbness of lips and tongue, headache, blurred vision, and slurred or slowed speech.

If not treated, low blood sugar can lead to fainting or seizures. A low blood sugar can happen quickly and be life threatening. People with diabetes experience different signs when their blood glucose is low. You should become aware of how you feel when your blood glucose is too low. Some patients do not experience any signs when their blood glucose is low.

These patients must depend on blood glucose testing to find out if they have hypoglycemia.

If you have low blood glucose, immediately eat or drink something containing fast-acting glucose.. Examples include any of the following: 3-4 glucose tablets, half a cup of fruit juice, 1/2 can of regular soda pop 1-2 hard candies, or 2 teaspoons of sugar or honey. If your symptoms do not disappear in 15 minutes or your blood glucose remains less than 4.4 mmol/l (80mg/dL), take another dose of fast-acting sugar. Repeat every 10 to 15 minutes until the blood glucose is greater than 4.4 mmol/l (80 mg/dL).



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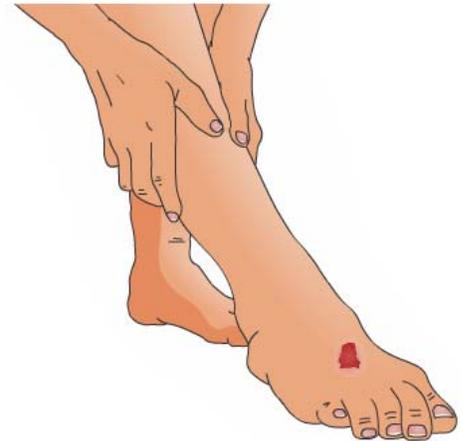
If it is less than 30 minutes until your next meal, eat that meal. If it is more than 30 minutes, eat a snack such as half a sandwich or 3 small cookies. Eat the meal or snack after you have taken a dose of fast-acting sugar. Do not subtract the snack from your next meal plan.

Do not drive or operate equipment if you feel your blood glucose is low. You should inform your family members and friends that you have diabetes and if they ever find you unconscious or not making sense, they should take you to a hospital immediately or call Your Medical Emergency number.

Complications of Diabetes

When you control the level of glucose in your blood, the signs of diabetes become less frequent. You will feel better and have more energy. If you do not follow your diet, exercise, and perform blood glucose tests, serious complications can arise. Complications of diabetes include damage to the nerves and blood vessels of the body.

Nerve damage is known as diabetic neuropathy. It usually involves the nerves going to the legs and feet. The feet or legs could feel numb or unusually cold. Non traumatic lower limb amputations can occur in people with uncontrolled diabetes.



People with diabetes who have poor sensation in their feet must be very careful to avoid damaging their feet with ill-fitting shoes, hot water, or other forms of injury. Check your feet every day for cuts, sores, redness, or swelling. Use a mirror if needed.

When visiting the clinic, ask your health care provider to check your feet.

Sexual dysfunction can occur. In men with diabetes, the most common problem is impotence due to damaged nerves going to the sexual organs. Urologists can help treat impotence with surgical and non-surgical treatments. In women with diabetes, damaged nerves in the pelvic organs and genitals can lead to impaired sexual arousal and painful intercourse. If this happens, your health care provider can recommend a treatment.

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Because the nerves that go to the heart may be affected, people with diabetes who have a heart attack may not experience the typically described chest pain. People with diabetes should therefore be very suspicious when they feel chest heaviness, arm numbness or indigestion. These could be symptoms of a heart attack. Adults with diabetes have heart disease death rates 2 to 4 times higher than adults without diabetes. The risk of stroke is 2 to 4 times higher among people with diabetes.

High blood glucose can cause damage to large and small blood vessels. Fat in the blood is deposited on the walls of blood vessels. This causes hardening of the arteries or arteriosclerosis. Hardening of the arteries can occur in arteries leaving or entering the heart. It can also occur in the legs.

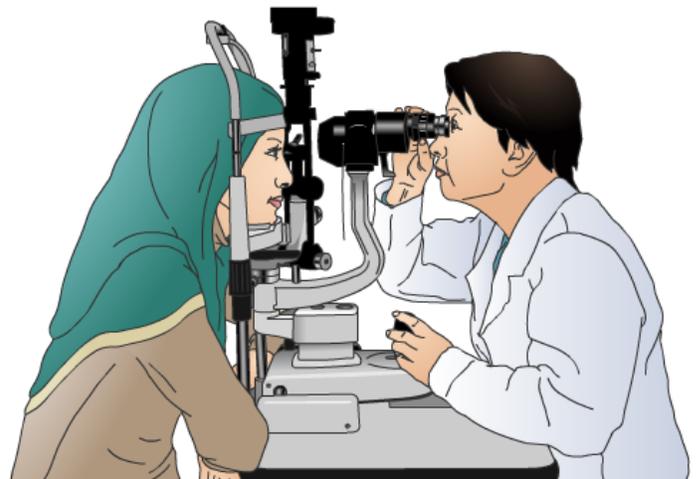
Your diet plan is designed to lower the level of fat and cholesterol in the blood. When small blood vessels are narrowed by plaque and fat, the blood flow to the organs becomes insufficient. This causes the death of cells dependent on receiving the blood. It can also cause bleeding from narrowed blood vessels.

The thickening of small blood vessels is most noticeable in the kidney and in the back of the eye. Diabetes is the leading cause of new cases of blindness among adults.

Diabetes may stop the kidneys from cleaning waste out of the blood. In addition, proteins that should stay in the body may leak into the urine. Your health care provider can test for small amounts of protein in your urine to determine if there are early signs of kidney diseases.

Diabetes is the leading cause of kidney failure.

People with diabetic kidney disease often develop high blood pressure. It is very important that the high blood pressure be treated with blood pressure lowering medicines because this helps to prevent worsening of the kidney problems.



If you have diabetic kidney disease, your health care provider may also prescribe a special diet that is low in protein and restricted in salt. In rare cases, dialysis and even kidney transplants may become necessary.

Gum disease is more common in people with diabetes. Among young adults, those with diabetes have about twice the risk of gum disease as those without diabetes. If you have diabetes and smoke, talk to your health care provider about smoking cessation support.

All health care providers feel that controlling your diabetes will help prevent damage to blood vessels and nerves. Proper control of diabetes is a combination of diet plan, medication, exercise, blood glucose monitoring, and good hygiene.

Summary

Thanks to advances in medicine, diabetes can be successfully controlled. The role of the patient is essential in making a diabetes management plan succeed.

Diabetes management consists of:

- Following a diet plan.
- Testing blood sugar.
- Exercising.
- Taking all prescribed medication on time.
- Ensuring good hygiene.
- Learning about diabetes.



Your diabetic health care team will explain to you your specific diabetes control plan. When you follow these instructions, the possibility of experiencing the problems of diabetes discussed in this program can be significantly reduced.

This reference summary is made available to you by your health care team to help you enjoy a healthier lifestyle while controlling diabetes.

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