

# Diabetes

November 2022



# What is Diabetes?

- Diabetes is a disease that changes the way our bodies use food. It causes the level of sugar in the blood to be too high. The extra sugar harms the blood vessels and other organs in the body over time. Diabetes can cause great damage before any symptoms appear.
- When we eat, our bodies digest the food and turn it into sugar, or glucose. In a normal healthy person, an organ called the pancreas produces insulin, a hormone. Insulin helps the body's cells use glucose to produce energy. The cells use this energy to keep our bodies healthy.
- In someone with diabetes, either the pancreas is not producing enough insulin or the body does not use its insulin effectively. The cells cannot turn sugar into energy, and the sugar builds up in the blood. The cells are starved for energy, and the blood carries dangerously high levels of sugar that can't be used.

# Main Types of Diabetes

- Type I- means that the pancreas is not producing insulin or is producing very little. This type ***always*** requires shots of insulin injected into the body every day.
- Type II- means that the pancreas is producing insulin, but not enough, or the body does not use the insulin effectively.
- Nine out of 10 cases of diabetes are type II. It usually occurs in people over the age 45 who are overweight. It can be treated by diet, exercise, and/or medications that are taken by mouth. Sometimes it also requires insulin injections.

# Importance of Controlling Diabetes

- The goal of treatment for diabetes is to keep the individual's blood sugar as close to normal as possible for that person. Doing this will lower the person's chances of getting:
  - Stroke
  - Heart disease
  - Kidney failure
  - Stomach disease
  - High blood pressure
  - Eye disease, loss of vision, or blindness
  - Nerve damage, with pain or loss of feeling in hands, feet, legs, or other parts of the body
- A high level of sugar in the blood over a long period of time causes these problems.

# Diabetic Treatment

- There are 4 parts to diabetic treatment:
  - Diet
  - Exercise
  - Medicine
  - Monitoring
- Anyone who helps a diabetic person should be familiar with the medicine, exercise regimen, monitoring program, and diet that the individual is supposed to follow.

# Diet

- There is not one diabetic diet designed for every diabetic person. There are guidelines to help diabetics with food choices. These guidelines are very similar to the kind of eating that is healthy for anyone. The following are the main rules that should be followed:
  - Eat few sugary foods
  - Eat less fat, especially saturated fat and cholesterol (butter, margarine, oils)
  - Eat a variety of fresh fruits, vegetables, lean meats, and fish
  - Eat just enough calories to stay at a healthy weight
- The exact number of servings a diabetic should have from each food group depends on individual calorie and nutrition needs, weight goals, exercise level, and preferences

# Diet Cont.

- Many people think that diabetics are not allowed to eat sugar of any kind. This is no longer required. Sugar is a carbohydrate, like bread or potatoes, and can be part of a diabetics food plan. However, most sugary foods provide calories without many vitamins and minerals, and they are often high in fat. It is better to eat more foods rich in nutrients, like vegetables and fruits, and very few fatty, sweet foods like ice cream and candy.
- Dietitians sometimes teach diabetics and those who care for them to use exchange lists. These lists are a way to plan meals by putting foods in category, such as a starch exchange or fruit exchange. Foods on a list can be substituted for each other and sometimes for foods on other exchange lists. The diabetic person eats only a certain number of each type of exchange every day, as ordered by a doctor or established by the dietician.

# Exercise

- Exercise usually lowers blood sugar and may help insulin work better. It helps control weight, it improves blood flow, and it strengthens the heart. People with diabetes should exercise at least three times per week. Before a diabetic starts a new exercise program, a doctor should approve what kind, how often, and how long the diabetic exercises. Elderly and disabled people need to exercise also and should be helped to find an exercise they can do.
- It is important that a diabetic not develop low blood sugar while exercising. Since the body burns sugar during exercise, the diabetic should “fuel up” with a piece of fruit or half a sandwich within an hour before starting any exercise. It is also a good idea for the diabetic to check his blood sugar level before he starts exercising. If the blood sugar reading is less than 70, he should eat something and wait for the blood sugar level to come up over 70 before exercising.
- If a diabetic feels faint, sweaty, dizzy, or confused while doing any activity, he should stop what he is doing and immediately drink fruit juice or a sweet (not diet) soft drink. He must respond quickly to this feeling, because it means his blood sugar level is too low.



# Medication

- Diabetics might receive insulin shots or they may take pills by mouth. Only a doctor can decide what medications and how much of it a diabetic should receive. It can be very dangerous to change a diabetic's medication in any way unless it is ordered by a doctor. Diabetics must receive the exact amount of medicine their doctor has ordered, at the times the doctor has ordered. Timing the medicine and meals is important to prevent low blood sugar.

# Monitoring

- Close monitoring of a diabetic's blood sugar level is one of the best ways for him or her to prevent long-term complications from the disease. Diabetics check their blood sugar by pricking a finger with a needle and testing a drop of blood with a special blood glucose meter. The meter, also called a monitor, gives a number that tells the level of glucose in the blood. These monitors must be kept clean and should be checked for accuracy periodically.
- Most diabetics need their blood sugar level tested at least once per day, usually in the morning before breakfast. Depending on the type of diabetes, the age of the person, and other factors, the individual may need his blood glucose tested as much as five times a day. Sometimes insulin dosages are adjusted depending on blood sugar level.
- Another important part of monitoring is watching the feet and skin of a diabetic. Diabetics can turn a small sore or wound into a very large problem. Sores, blisters, and wounds on a patient's feet and skin must always be reported to your supervisor or nurse.

# Diabetic Emergencies

- Diabetes can cause both long-term and short-term problems. Blood sugar that is too low or extremely high can lead rapidly to unconsciousness and even death. You must know the symptoms of both conditions and know how to respond.
- Hypoglycemia- means that the level of sugar in the blood is too low (less than 70). Too much insulin or oral medication, too much exercise, not eating enough food, or drinking alcohol can cause it. Hypoglycemia can cause strokes and heart attacks in the elderly.
- Hyperglycemia-means that the level of sugar in the blood is too high (above 180) it can be caused by infections, illness, stress, injury, not enough insulin, not enough exercise, or eating too much food. Very high levels of sugar can cause coma and death.

# Symptoms of Low Blood Sugar

- The following symptoms occur suddenly and without warning:
  - Shaky, nervous
  - Sweaty and cold
  - Pale, clammy skin
  - Weak and tired
  - Sudden hunger
  - Blurred or double vision
  - Tingling of hands, lips, or tongue
  - Confusion
  - Personality changes
  - Slurred speech
  - Loss of consciousness
  - Nausea
  - Dizziness

# Low Blood Sugar Cont. (Hypoglycemia)

- Elderly people and people with other diseases and disabilities can be especially sensitive to low blood sugar, and it can be very dangerous for them. Some people may have a reaction even if their blood sugar is not below 70. Any diabetic suddenly showing any of these signs listed on the previous slide must receive immediate attention.
- **Treatment**
  - The person should drink a sweet drink, such as sugar-sweetened coffee or tea, orange juice, or non-diet soda. Or the diabetic could take glucose tablets.

# Symptoms of High Blood Sugar

- The following symptoms occur gradually and get worse over time:
  - Extreme thirst and/or hunger
  - Rapid weight loss
  - Frequent urination
  - Vision changes
  - Dry skin and mouth
  - Fatigue, drowsiness
  - Nausea
  - Fruity-smelling breath
  - Very deep, gasping breathing
  - Unconsciousness

# High Blood Sugar Cont. (Hyperglycemia)

- **Treatment**

- The first seven symptoms in the previous slide should be reported to your supervisor or a nurse as soon as possible. Fruity-smelling breath, deep gasping breathing, and unconsciousness are emergency symptoms that can lead quickly to death. Call 911 or access emergency medical care at once.