

Diabetes

Protecting Your Health

Glucose is a type of sugar that provides energy to our bodies. People with diabetes have too much glucose (sugar) in the bloodstream, which can lead to various health problems.

Blood Sugar Levels

Normal fasting blood sugar level is 70-99 mg/dl. Two hours after eating, blood sugar level should be less than 140 mg/dl. Diabetes is diagnosed when:

- The fasting blood sugar is 126 mg/dl or higher.
- Blood sugar is 200 mg/dl or higher at any time of the day with symptoms of diabetes.
- Blood sugar is 200 mg/dl or higher at 2 hours after eating.
- “Pre-diabetes” includes fasting blood sugar of 100-125 mg/dl, or blood sugar of 140-199 mg/dl 2 hours after eating. People with blood sugar in these ranges have increased risk of developing diabetes, but can take steps to prevent diabetes.

The body makes a hormone called insulin, which regulates the amount of glucose in the blood. Persons with diabetes have a problem with insulin working effectively or not making enough of it in the pancreas. Some people do not make any insulin. Some people require 2 to 3 times more insulin to get the job done. Sometimes the body does not use the insulin properly when it is available.

Type 1 Diabetes

Type 1 diabetes is when the body cannot produce insulin. It often appears suddenly in children or young adults. This is called “juvenile diabetes”. Yet people of any age can develop type 1 diabetes, if the pancreas stops making insulin.

Without insulin, the blood sugar gets too high, causing increased urination and excessive thirst. People with untreated type 1 diabetes often lose weight despite being hungry. The 3 important signs of type 1 diabetes are:

- Increased thirst
- Increased urination
- Increased hunger and weight loss

Because persons with type 1 diabetes cannot make insulin, they must take insulin for life, by injection, infusion under the skin with an insulin pump, or inhalation. Failure to receive adequate insulin can result in a dangerous condition known as diabetic ketoacidosis.

Type 2 Diabetes

People with type 2 diabetes usually produce some insulin, but not enough to regulate the blood sugar properly. Often people with type 2 diabetes require more than the usual amount of insulin to control blood sugar, a situation called “insulin resistance.” Although some people with type 2 diabetes may have increased thirst, urination and hunger, often there are no symptoms at all. Therefore, type 2 diabetes may go undiagnosed for years.

Type 2 diabetes is much more common than type 1. Over 90 percent of patients with diabetes have type 2. Type 2 diabetes is more frequent with increasing age, but is becoming more common in overweight children and adolescents.

Diet and various medicines usually can control type 2 diabetes. Patients may or may not need insulin therapy.

Risk Factors for Type 2 Diabetes

- Family history – children of parents with type 2 diabetes have an increased risk of developing the disease
- Race – Hispanics, African-Americans, Pacific Islanders, American Indians and Asians have an increased risk
- Being overweight – increased body weight increases risk
- Body fat distribution – increased abdominal fat can increase your risk
- Sedentary lifestyle – many people who develop type 2 diabetes do not exercise regularly. Note that 45 minutes to one hour per day of physical activity decreases risk.

Other Types of Diabetes

Secondary Diabetes

Secondary diabetes occurs because of other diseases or treatments. It may or may not resolve. Patients have symptoms similar to type 1 and type 2 diabetes. Some causes include:

- Disorders of the pancreas: such as pancreatic cancer or pancreatitis
- Cancer treatments: such as steroids and some chemotherapy medicines
- Cushing’s syndrome, acromegaly and other hormonal disorders.

Diabetes Management

Diabetes can be managed with careful attention to diet, exercise and medicines. Blood sugar control requires many factors including:

- For type 1 – insulin either by injection, pump or inhalation
- For type 2 – medicines by mouth, or insulin for some
- Many people with diabetes should test blood sugar, as instructed by their health care provider.
- Keep a diary and record your blood sugar levels each time you test.
- Record all medicines you have taken or missed in your diary.

- Bring your diary with you at your next doctor's appointment.
- Laboratory tests such as hemoglobin A1c (HbA1c) can provide useful information about blood glucose, in addition to or instead of blood sugar testing.
- HbA1c is related to average blood sugar levels over 3 months. The HbA1c result helps determine if your diabetes treatment plan is working or if adjustments are needed.
- An HbA1c test is usually done every 3 months if there was a change with your medicine. Once your goal is achieved, the test is done every 6 months.
- Your doctor should discuss with you the appropriate HbA1c target for your situation.
- Proper diet and meal planning are important for everyone with diabetes.
- Exercise is a very important part of the treatment for type 2 diabetes. Record each time you exercise in your diary.
- Exercise will influence blood sugar of people with diabetes. It may affect glucose level immediately, causing a low, or later helping to bring down the sugar level.
- Weight: maintain a healthy weight. If you are overweight or obese, losing weight helps with blood sugar control and may decrease your insulin needs.

Routine Health Maintenance

When diabetes is not managed properly, blood sugar levels can become too high. High blood sugar damages small blood vessels called capillaries. Good capillaries are critical for healthy eyes, kidneys, nerves, skin, feet, etc. Taking your medicine, following your meal plan, regular exercise and keeping a good weight will protect your health.

You can also do the following:

- Get an eye exam every year. Tell your eye doctor that you have diabetes. Diabetic retinopathy, or damaged blood vessels in the eye, is the leading cause of blindness in the U.S.
- As diabetes can affect the kidneys, your doctor should check kidney function regularly. Tests such as urinary albumin can help your doctor determine whether diabetes is affecting your kidneys. Your doctor may prescribe medicines to help protect your kidneys from the effects of diabetes.
- Get your immunizations through your primary care doctor.
- Have your feet examined at least once a year. Take care of your feet:
 - Look at all areas of your feet every day. Use a mirror, or have someone help you if necessary.
 - Wash feet daily with mild soap. Dry thoroughly, especially between the toes.
 - Moisturize feet daily with an alcohol-free lotion. Do not apply between the toes.
 - Inspect your shoes daily. Feel the inside for cracks or irregularities that may irritate.
 - Wear well-fitting shoes. Do not wear sandals since it increases risk of injury to your feet.
 - Wear soft cotton or wool socks.
 - Do not go barefoot, even when indoors.
 - See a Podiatrist regularly for foot care. This includes nail cutting, blisters, calluses, wounds or ingrown toenails.
- Take care of your teeth and gums:
 - Brush teeth twice daily with a soft toothbrush and fluoride toothpaste
 - Floss teeth every day

- Visit the dentist every 6 months for teeth cleaning and yearly for a full exam
- A tooth infection can cause higher blood sugar levels, so it is important to have preventative care.

For more information on diabetes, contact:

Diabetes Education

Monday through Friday, 8 a.m. to 5 p.m.

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