

How diabetes affects your body



A discussion tool for
health care providers
and patients

What do I need to know about blood sugar?



Glucose is your body's fuel

The blood in your body contains sugar, also called glucose. Your body needs energy to get you through the day. That energy comes from glucose.

- Glucose in your blood comes from the food you eat and is also made in your liver.
- Glucose travels through your blood to reach and feed every part of your body.

The liver and pancreas are your body's blood sugar managers

The liver and pancreas work together to make sure that your blood sugar is never too low or too high. Here's how:

- The liver makes glucose and stores extra glucose that your body doesn't need right away.
- The pancreas makes sure that glucose can be used properly.

How can I take control of my blood sugar?

To control your blood sugar, you need to know your blood sugar numbers and your target goals.

- A1C test is an estimate of your blood sugar over the previous 2 to 3 months.
- Talk to your health care team about your A1C goals.
- Ask for an A1C test at least twice a year.
- Ask your health care team what your A1C number is, what it means, what it should be, and what you need to do to reach your A1C goal.
- Check your blood sugar as often as needed and go over the results at each visit with your health care provider and health care team.

It is important to eat the right foods and portions. Get regular physical activity as advised by your health care team. Take medicines that have been prescribed for you.

Ask your health care team about your blood pressure and cholesterol numbers and what your goals should be.

In diabetes, the liver and pancreas are unable to keep blood sugar at the correct level. That's why you have high blood sugar.

Diabetes can affect your heart and blood vessels



Your heart

Diabetes can cause serious problems for your heart and blood pressure. Disease of the heart and blood vessels, known as cardiovascular disease, is a major cause of death in people with diabetes. People with type 2 diabetes are 2 to 4 times more likely to have heart disease and stroke than people without diabetes.



Controlling your blood sugar and cholesterol can reduce your risk of heart disease.

What can I do to help prevent heart disease?

There are many things that you can do to lower your risk of heart disease

- Maintain a healthy weight
 - Losing weight can help lower your triglycerides and low-density lipoprotein (LDL) cholesterol levels.
 - Some people who are overweight can lower their high blood pressure to normal levels just by losing weight.
- Get active
 - Exercise for at least 30 minutes a day, 5 days a week. Start off slowly and build up to 30 minutes.
 - Being more active can lower LDL cholesterol and raise high-density lipoprotein (HDL) cholesterol as well as help lower your blood pressure.
- Eat healthier
 - Look for foods that are low in saturated fats, trans fats, cholesterol, and sodium.
 - It is important to know not only what and when to eat, but also how much to eat. Focus on filling your plate with nonstarchy vegetables and having smaller portions of starches and meats.
- Take your prescribed cholesterol, blood pressure, and other medicines as directed.

Your health care provider will discuss the important tests you need to take, how often you need to take them, and what goals are right for you.

Diabetes can affect your eyes



Protect your eyes by having a dilated eye exam every year.

High blood sugar levels can cause eye problems.

Diabetes causes most new cases of blindness in people up to age 74.

Diabetes can cause 3 common types of vision problems:

- Diabetic retinopathy, or damage to the retina, is the most common cause of vision loss.
 - In this condition, damaged blood vessels in your eyes leak into the retina.
- Glaucoma, or increased pressure in your eyes, damages your vision.
- Cataracts cause foggy or cloudy vision.

What can I do to prevent eye problems?

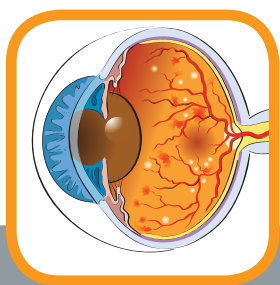
One of the best things you can do to protect your eyesight is to keep your blood sugar under control.

You should also try to keep your blood pressure as low as possible. High blood pressure can damage all your blood vessels, including those inside your eyes.

A dilated eye exam is easy and painless.

You can help protect your eyes and keep them healthy by having a dilated eye exam once a year.

During the exam, your eye doctor will dilate your pupils. The doctor will then be able to see inside your eyes to look for problems.



Diabetes can damage the blood vessels in your eye causing vision problems.

Diabetes can affect your nervous system



Nerve damage can lead to serious health problems.

If you have diabetes, it is important to try to avoid nerve damage because it can lead to serious health problems.

Between 60% and 70% of patients with diabetes have nerve damage, called neuropathy. This damage can cause tingling, pain, or numbness in your feet, hands, or legs.

Controlling your blood sugar can help prevent or delay nerve damage and related problems.

How can I protect myself against nerve damage?

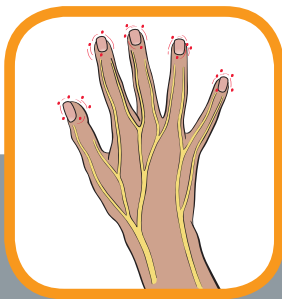
There are many things you can do to help lower your chances of getting nerve damage. Follow these steps:

- Keep your blood sugar in control
 - Check your blood sugar regularly.
 - Have your health care provider test your A1C at least twice a year.
 - Take your prescribed medicines.
 - Eat healthy and stay active.
- Live healthier
 - Control your blood pressure.
 - If you are overweight, lose weight with diet and exercise.
 - Stop smoking.
 - Limit your alcohol use.
- Talk to your health care provider
 - Discuss any numbness, tingling, or pain. Also discuss any problems with digestion, going to the bathroom, or sexual function.

Nerve damage in toes



Nerve damage in fingers



If you already have nerve damage, you can help stop it from getting worse.

Diabetes can affect your kidneys



Why is kidney disease dangerous?

Having kidney disease increases the chance that you will get heart disease. If kidney disease is not treated, your kidneys will get worse until they are able to do very little. This is called kidney failure, or end-stage renal disease, and, if left untreated, may cause death.

There is no cure for kidney disease, but the earlier you find and treat kidney disease, the better your chances are of helping to prevent kidney problems. That's why it's so important to visit your health care provider regularly to control your diabetes.

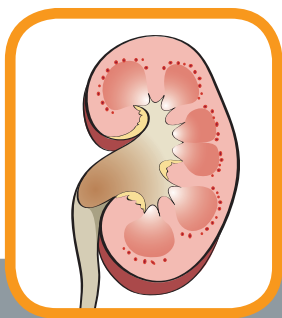
What does kidney disease do to the kidneys?

Your kidneys remove waste from your blood and make urine to remove the waste from the body.

Your kidneys contain millions of filters. These filters remove waste but leave red blood cells and protein in the blood, where they belong. But high blood sugar damages these filters until they can no longer do their job.

What can I do to prevent kidney disease?

- Keep your blood sugar under control.
- Keep your blood pressure low.
 - High blood pressure can lead to kidney disease or make it worse.
- Lose weight if you are overweight.
- Avoid drinking alcohol and smoking.
- Be active every day.
 - Talk to your health care provider before beginning any physical activity.
- Visit your health care provider regularly.
 - Get screened for kidney disease to catch problems early. Your health care provider can do a urine test to determine whether your kidneys are functioning as they should.
- Follow your health care team's advice.
 - Sometimes, exercise, changes to your diet, and medicine can help keep your kidneys healthier.



If you find out that you have kidney disease early enough, you can help stop it from getting worse.

Keeping your body healthier



Good care today will pay off tomorrow.

Take good care of yourself every day. It's the best way to improve your odds against future health problems.

Here's how: Know and control your blood sugar levels

- *Test at the health care provider's office.* Be sure to get an A1C test at regular intervals. This simple blood test will give you and your health care provider the overall picture of your blood sugar levels during the time between visits.
- *Test at home.* Use your blood sugar monitor to measure your sugar levels at specific times during the day. This will help you understand how your blood sugar levels respond to food, exercise, and medication.
- *Follow your treatment plan.* Ask questions if you don't understand or have trouble following the plan.

Keep your appointments and test schedule

- Here are some guidelines for how often you may see your health care providers to get certain tests.
- You may want to schedule your next visit before leaving the office.

Tests to help keep your diabetes under control

Your health care provider will discuss the important tests you need to take, how often you need to take them, and what goals are right for you. You may want to schedule your next visit before leaving the office.

You should have...	At least...
Your A1C tested	Twice a year
Your blood pressure tested	Every visit
Your cholesterol tested	Once a year
Your feet examined by your primary health care provider	Every visit
Your urine tested for microalbumin	Once a year
A complete eye exam, including a dilated eye exam, from an eye doctor	Once a year
A dental exam	Once a year

Keeping your body healthier

Manage your weight

- Ask your health care provider for a plan you can live with.
 - Start with small changes if necessary, such as adding a serving of fruit and vegetables every day and reducing your overall caloric intake if you need to lose weight.
 - You may want to see a nutritionist for additional help.
- Limit alcohol. Drinking can derail your weight-loss efforts. It can also lead to other health problems.

Start moving more

- Regular exercise is important for everyone, even for those at a healthy weight.
- If you're starting an exercise regimen, check with your health care provider for a plan that's right for you. Start with just a 10-minute walk every day.



Stop smoking

- Diabetes can enhance the bad effects that cigarettes have on the body, greatly increasing your risk for future health problems.
- Ask your health care provider for help if you need it.

Take special care of your feet and your mouth

- Because of the effects of high blood sugar, the feet and mouth are areas of special concern for patients with diabetes.
- Foot care:
 - Check your feet regularly for any changes, pain, numbness, or sores that do not heal.
 - Wear comfortable socks and properly fitted shoes at all times.
- Oral care:
 - Brush your teeth at least twice a day and floss at least once a day.
 - Watch for symptoms such as loose teeth, bleeding gums, and bad breath.



Take control

- Be aware of the overall signs and symptoms discussed.
- Ask questions and share concerns with your health care team. They're here to help you succeed.



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