

COMPLICATIONS and REDUCING RISKS

Your blood vessels carry blood throughout your body. When your blood sugar levels are higher than normal for a long period of time, it may cause damage to your blood vessels and nerves. When your blood vessels are damaged, it makes it harder to get blood to certain areas of your body. This may cause complications.

Retinopathy

Diabetes can harm your eyes. The tiny blood vessels in the retina can be damaged over time. If left untreated, it may cause vision loss or blindness. If diabetes is affecting your retina, you may have blurred vision or see black spots, floaters or flashes of light. If this happens, you need to call your provider right away.

To prevent or manage eye disease:

- Tell your eye doctor that you have diabetes.
- See an eye doctor at least once a year for a diabetic eye exam. You may need to go more often if you have retinopathy.
- Keep your blood sugar within your goal range.
- Call your doctor if you are having vision problems.



Peripheral Neuropathy

High blood sugar may damage your nerves. Peripheral neuropathy affects the nerves that are far away from your heart. This includes the nerves in your hands, arms, feet and legs. Usually, it starts in the feet. Symptoms may be worse at night.

Peripheral neuropathy may cause:

- Pain
- Numbness or tingling
- Weakness

Loss of feeling in your feet may make it hard to tell if you have a sore on your foot. It might take a long time for a sore to heal if you have poor circulation.

Your provider should look at your feet at each office visit to check for sores, blisters or other problems. It is always good to remind your provider to check your feet by taking off your shoes and socks in the exam room. Once a year you should have a comprehensive foot exam.

During a comprehensive foot exam your provider should check:

- The skin on your feet
- Your foot muscles and bones
- The blood flow in your feet
- For numbness in your feet

If you already have problems with your feet, they may need to be looked at more often by your provider or a podiatrist (foot doctor). However, between provider visits there are many things you can do to keep your feet healthy.

- **Check your feet every day.** Look at your feet for red spots, cuts, swelling, blisters or in-grown toenails. If you cannot see the bottoms of your feet, use a mirror or ask someone for help.
- **Wash your feet every day.** Dry them carefully, especially between the toes.
- **Keep your skin soft and smooth.** Rub a thin coat of skin lotion or cream over the tops and bottoms of your feet, but not between your toes.
- **If you can see and reach your toenails, trim them.** Trim your toenails straight across and file the edges with a nail file when needed. If you cannot do this on your own, you may need to see a podiatrist (foot doctor).
- **Wear shoes and socks at all times.** Never walk barefoot. Wear comfortable shoes that fit well. Check inside your shoes before wearing them to make sure the lining is smooth and there is nothing inside. Wear socks without seams if possible. Ask your provider about the need for special shoes.
- **Protect your feet from hot and cold.** Wear shoes at the beach or on hot pavement. Test the temperature of the water before putting your feet in. Never use hot water bottles, heating pads or electric blankets on your feet. You can burn your feet without realizing it.
- **Put your feet up when sitting.** Wiggle your toes and move your ankles and feet up and down throughout the day. Don't cross your legs for long periods of time.

Autonomic Neuropathy

Diabetes can also cause autonomic neuropathy. The autonomic nerves control the parts of the body that work “automatically” without you telling them. It is important to talk to your provider if you think that you are having problems in any of these areas.

- **Digestion:** After you eat your body digests food. Sometimes diabetes can damage the ability to move food through your system. This is called gastroparesis. It can lead to vomiting and bloating. It may change how fast your body absorbs food and affect how your blood sugars are treated.

- **Bladder and Bowel:** Your bladder or bowels may not work normally. When this happens with the bladder, you may not be able to feel when your bladder is full. When the nerves that control the small intestine are damaged, diarrhea or constipation can occur.
- **Sexual Dysfunction:** Autonomic neuropathy may make it difficult to get or keep an erection when it affects the nerves that control erection. Women may have difficulty with vaginal dryness or orgasms or irregular menstrual cycles.
- **Recognizing Low Blood Sugar:** Typically, your body warns you when you are having a low blood sugar. You may not notice any warning signs when your blood sugar is too low. This may be serious.
- **Ability to Sweat:** Sweating too much or too little may happen. This may affect the ability to adjust body temperature. This may also cause your skin to be dry and itchy.

Nephropathy

Kidneys are like filters. Inside of them are millions of tiny blood vessels that remove waste products from the blood. Diabetes can damage the kidneys. This causes waste products to build up in your blood. The first symptom of kidney disease is often fluid buildup. You might also notice loss of sleep, poor appetite, upset stomach and weakness. If your kidneys fail to work, you may need dialysis or a kidney transplant.

Kidney disease can be prevented or delayed by:

- Keeping your blood sugar in your target range
- Keeping your blood pressure in your target range. Even a small rise in blood pressure can make kidney disease worse.
- Have your provider check your:
 - Blood pressure
 - Urine (for protein) once a year
 - Blood work (for waste products) once a year



If you are having any symptoms of kidney disease, you should call your provider right away.

Cardiovascular Disease

People with diabetes are more likely to have high blood pressure (hypertension) and high cholesterol (hyperlipidemia). If you have too much cholesterol, it may narrow or block your blood vessels. Heart disease occurs when the vessels that supply blood to the heart are blocked. This may cause a heart attack.

Stroke

You are at increased risk for a stroke if the blood vessels that go to your brain are damaged or blocked. A stroke occurs when your brain is not receiving blood supply. Symptoms of stroke include trouble speaking, seeing or walking and numbness in the face, arm or leg.

Use the letters in F.A.S.T. to notice the symptoms of stroke.

- Face drooping
- Arm weakness
- Speech
- Time to call 911

Poor Circulation

Blocked blood vessels may also make it harder for blood to circulate to your feet and legs. Poor circulation may lead to cold or numb feet, leg and foot pain and possibly wounds.

To keep your blood vessels healthy:

- Keep your blood sugar in your target range
- Control your cholesterol levels
- Keep your blood pressure in a good range
- Maintain a healthy weight and BMI
- Make healthy food choices
- Do not use tobacco products

Test	Target Value
Total Cholesterol	Less than 200 mg/dL
LDL	Less than 70 mg/dL or Less than 55 mg/dL if you have heart disease
HDL	Over 40 mg/dL (Men) Over 50 mg/dL (Women)
Triglycerides	Less than 150 mg/dL

Dental Complications

It is important to take care of your mouth when you have diabetes. Dental problems may be more serious when you have diabetes or your blood sugars are not controlled. It is important that you see a dentist. You can discuss any oral health issues such as pain, swelling or bleeding. To prevent complications, you should:

- Have your teeth checked and cleaned at least once every 6 months
- Brush your teeth twice a day
- Floss daily

Vaccinations

Vaccinations are given to help prevent illness. Diabetes can make it harder for your immune system to fight infections. You may be at risk for more serious complications from an illness. It is important that you discuss with your provider what vaccinations are right for you and when to get them. The Centers for Disease Control and Prevention (CDC) recommends that people with diabetes get the following vaccinations:

Vaccine	How Often
Influenza (Flu)	Yearly
Pneumococcal (Pneumonia)	Check with your provider
TDAP	Every 10 years
Hepatitis B	Once (3 dose series)
Zoster (Shingles)	Once (2 dose series)
COVID-19	Primary series and booster when eligible
HPV	Once (2-3 dose series)