

# Diabetic Kidney Disease: Prevention and Treatment

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There is a lot to manage with diabetes. Managing your blood sugar is very important, but patients with diabetes are also at risk for heart disease, high blood pressure, vision loss, nerve damage, and kidney issues. There are many ways to prevent these medical issues. This handout focuses on things you can do to prevent kidney damage.

## What do I need to know about kidney disease?

- The kidneys have an important role in the body. They are filters that remove waste products from the blood. When the kidneys are damaged, this filtering system breaks down.
- There are several stages of kidney disease. Patients in early stages are at risk of more damage and possible kidney failure in the future. However, many times there are no clear symptoms of early kidney disease. This means that early testing and treatment for kidney disease is very important.

## How does diabetes damage the kidneys?

- One of the side effects of high blood sugar from diabetes is damage to the kidneys' filtering system. Over time, this makes the kidneys leak useful proteins that your body needs to function into your urine (pee).
- The kidney damage over time can cause water and waste products to build up in the blood. This can eventually lead to chronic kidney disease and kidney failure. Some patients will need a kidney transplant or to have their blood filtered by a machine several times a week through a process called **dialysis**.

## **How is kidney damage from diabetes diagnosed?**

Every year, patients with Type 2 diabetes should have a blood test and a urine test to check their kidney function.

- The urine test (called the **urine albumin-creatinine ratio, or uACR**) measures for any extra protein (called albumin) that leaks into the urine. This is the earliest sign of kidney issues, even before kidney issues will show on the blood test.
- The blood test measures the **estimated glomerular filtration rate (eGFR)**, which measures how well the kidneys are filtering your blood.

## **Who is most at risk for diabetic kidney disease?**

- Those who have high blood sugars over time (an A1C above 7%) are most at risk for kidney damage related to diabetes.
- Other risk factors include having had diabetes for a longer time, high blood pressure, having a family history of heart disease, higher weight, smoking, and high cholesterol levels.

## **How can I prevent kidney damage from diabetes?**

Early treatment can delay and prevent kidney damage over time. There are 4 areas of health you can focus on.

### **Blood sugar control**

Early in diabetes, good blood sugar control can protect your kidneys over time.

- For most people, a fasting blood sugar between 80-120 mg/dL is a good goal, or an A1C below 7%. The **A1C** is a blood test that measures your average blood sugar over the past 3 months. An A1C of 7% is equal to an average blood sugar of 150 mg/dL. Talk to your healthcare provider about an appropriate blood sugar goal for you and how to reach it.

## **Blood pressure control**

Having good blood pressure (on average, less than 130/80 mm HG) is just as important as good blood sugar.

- You can manage your blood pressure with lifestyle changes like eating a healthy diet, getting regular exercise, and maintaining a healthy weight for you.
- Decreasing salt (sodium) in your diet is an important part of good blood pressure. The goal is to limit the sodium in your diet to no more than 2-2.5 grams of sodium (less than 1 teaspoon of salt) per day.
- You can also talk to your healthcare provider about medications to manage blood pressure.

## **Reducing your risk of heart disease**

It is important to focus on lifestyle changes that protect your overall heart health. This includes quitting smoking if you smoke, avoiding drinking too much alcohol, maintaining a healthy weight for you, and maintaining good cholesterol levels (through diet, exercise, and/or cholesterol medications). These lifestyle changes have been shown to improve kidney health.

- A good goal is to exercise at least 30 minutes most days per week. For most people, a fast walk, bike ride, or swim is a good form of exercise. Talk to your healthcare provider about a good exercise routine for you.
- If you are a person of higher weight, small changes in weight (losing 5-10% of your current body weight) can make a big difference.

## **Medications to protect your kidneys**

- Your healthcare provider might talk to you about medications to protect the kidney. Most people with Type 2 diabetes will need at least one medication to treat high blood pressure. A group of medications called **angiotensin-converting enzyme (ACE) inhibitors** or a similar medication group called **angiotensin receptor blockers (ARBs)** are used because

they protect the kidneys from damage from diabetes over time, as well as being good blood pressure medications. These medications work by decreasing the amount of protein leaking into your urine.

- Another common group of medications are called **sodium glucose cotransporter 2 (SGLT2) inhibitors**. These medications treat diabetes by helping the kidneys to get rid of the extra sugar in your blood through your urine, which lowers your blood sugar levels. Over time, they also decrease the risk of kidney damage and heart failure. Some of the common medications in this group are empagliflozin (Jardiance®) and dapagliflozin (Farxiga®).

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