

# VACCINES AND DIALYSIS

*What You Need to Know*



National  
Kidney  
Foundation®

[www.kidney.org](http://www.kidney.org)

## About the Information in this Booklet

Did you know that the National Kidney Foundation (NKF) offers guidelines and commentaries that help your healthcare provider make decisions about your medical treatment? The information in this booklet is based on those recommended guidelines.

## Stages of Kidney Disease

There are five stages of kidney disease. They are shown in the table below. Your healthcare provider determines your stage of kidney disease, based on the presence of kidney damage and your glomerular filtration rate (GFR), which is a measure of your kidney function. Your treatment is based on your stage of kidney disease. Speak to your healthcare provider if you have any questions about your stage of kidney disease or your treatment.

### STAGES OF KIDNEY DISEASE

Stage	Description	Glomerular Filtration Rate (GFR)*
1	Kidney damage (e.g., protein in the urine) with normal GFR	90 or above
2	Kidney damage with mild decrease in GFR	60 to 89
3	Moderate decrease in GFR	30 to 59
4	Severe reduction in GFR	15 to 29
5	Kidney failure	Less than 15

\*Your GFR number tells your healthcare provider how much kidney function you have. As chronic kidney disease progresses, your GFR number decreases.

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Vaccines protect you from serious diseases, so they are an important part of your healthcare. This educational brochure will help answer some questions you may have about vaccines for people on dialysis.

### **Why do I need vaccines?**

Vaccines help protect people from diseases caused by infections from certain germs (viruses or bacteria). Some common diseases are the flu (or influenza), hepatitis B, tetanus, pneumococcus, and others. Many of these diseases can make you very sick and cause death. People with these diseases can pass them along and make others around them sick, so vaccines can also help protect others. Certain people have a higher chance of being seriously ill from these diseases, so they especially need protection. They include the elderly, children, and people with chronic illnesses including those on dialysis.



## Do I need vaccines if I am on dialysis?

Yes. Your body's immune system helps protect you from infections. However, people on dialysis can have weaker immune systems, making it harder to fight off infections. People on dialysis have a greater chance of getting an infection. There is also a greater chance of that infection becoming serious. Therefore, vaccines are an important part of healthcare for people on dialysis.

## How do vaccines work?

Vaccines are usually given as a "shot" (an injection with a small needle). They protect you by helping your body's immune system "prepare" for a real infection. To do this, vaccines contain parts of a dead or weakened germ. Once you get the shot, your body produces antibodies, which help your body find and kill these germs. Should you come in contact with the real germ, these antibodies will work to protect you. Some vaccines need a booster shot to help your body's immune system make enough antibodies. This is why some vaccines might need one shot, while others need more than one shot. In some cases, a blood test is used to make sure there are enough antibodies for protection.

## Are vaccines safe?

Vaccines are among the safest therapies available. They have protected millions of people from serious diseases.

As with any medicine, there are some possible side effects. Some people could feel minor discomfort. There could be some soreness or a mild rash on the skin where the shot was given. Others might get a slight fever. However, these mild effects are normal and should not cause alarm.



There are some people who should not receive vaccines, including those allergic to vaccines, or people with an overactive immune system. Also, women who are pregnant, people with a kidney transplant, or those with a less active immune system should not receive certain vaccines.

Some people are concerned that vaccines might cause autism. However, multiple studies show that there is no connection between receiving vaccines and getting autism.

The possible harm from vaccines is very small. The possible harm from infection is much greater. As with any medicine, talk with a healthcare provider about any questions or concerns you have about vaccines.

## Which vaccinations do I need and when do I need them?

Vaccines that are recommended for people on dialysis include flu (or influenza), hepatitis B, pneumococcus, Tdap (tetanus/diphtheria/pertussis), and others. You might need one shot to protect you for life. Other vaccines might need more than one shot to build up enough protection.

### Flu

The flu (or influenza) vaccine is commonly called the “flu shot.” It needs to be given once per year, usually in the fall before flu season begins. The flu shot helps prevent infection from the influenza virus. Flu symptoms can include headaches, body aches, high fever, sore throat, fatigue, and a runny nose. The flu can be passed along by casual, person-to-person contact. A flu infection can be very serious for people with a weaker immune system. People on dialysis have a greater chance of getting the flu, so yearly vaccination is very important.

### Hepatitis B

The hepatitis B vaccine helps protect against an infection from the hepatitis B virus (also known as HBV, or hep B). The hepatitis B virus attacks the liver. Symptoms of hepatitis B can include loss of appetite, nausea or vomiting, fever, extreme tiredness, or stomach or joint pain. Some of these symptoms are similar to the flu. However, hepatitis B can also cause a yellowing of the skin or eyes. A blood test can help prove if you have hepatitis B. A hepatitis B infection can cause liver failure or liver cancer. Some people (known as “carriers”) with hepatitis B have no symptoms, but are still able to infect others. Hepatitis B cannot spread by casual, person-to-person

contact, so it cannot be passed along by hugging or shaking hands. It is passed along by direct contact with the blood of an infected person.

The chance of getting hepatitis B through dialysis treatment is low because of strict infection control measures in dialysis units, and the availability of the hepatitis B vaccine. However, people on dialysis should still get vaccinated. People are usually given 3 shots to develop protection against HBV. However, people on dialysis might need more shots or a higher dose to develop enough protection. Talk to your healthcare provider about timing and dosage.

## Pneumococcus

The pneumococcal vaccine helps protect against infection from pneumococcal bacteria. There are two types of pneumococcal vaccines: PPSV23 and PCV13. People on dialysis should receive both vaccines.

Pneumococcal bacteria can infect many parts of the body. If it infects the lungs, it causes pneumonia. If it enters the bloodstream, it can cause sepsis, leading to poor blood flow and organ damage. Pneumococcal bacteria can infect the covering of the heart. It can also attack the nervous system and cause meningitis. These infections are very serious and can cause death. Because different parts of the body can be infected, symptoms can vary from person to person, and can appear very suddenly and without warning. Depending if the infection causes pneumonia, sepsis, or meningitis, people can feel some combination of these symptoms—fever, shaking/chills, cough, shortness of breath, chest pain, stiff neck, or disorientation.





Some people have a greater chance of getting a pneumococcal infection, including the very young and people 65 years and older. People on dialysis also have a higher chance. Depending on the vaccine and the person, 1 or 2 shots might be needed, followed by a booster shot in 5 years. Ask your healthcare provider about timing and spacing.

## Tdap (Tetanus, Diphtheria, Pertussis)

The Tdap vaccine can protect against infections from three different kinds of germs (bacteria)—tetanus, diphtheria, and pertussis. Diphtheria and pertussis are passed along by casual, person-to-person contact. People can get tetanus from cuts, scrapes, punctures, or other wounds.

Diphtheria is rare in the United States, but it can be a serious infection of the nose and throat. Symptoms can include fever, sore throat, weakness, or swollen glands. A telltale sign of diphtheria is a thick coating in the back of the throat, which makes it very difficult to breathe. Diphtheria can also lead to paralysis or heart failure.



Pertussis is also known as whooping cough. Symptoms can include congestion, runny nose, fever, watery eyes, and cough. Pertussis can cause coughing spells that make it hard to breathe or sleep. It can also lead to vomiting and weight loss. A person with pertussis may need to be in the hospital.

Tetanus, also known as lockjaw, is rare in the United States today. Symptoms can include muscle stiffness or tightening that is painful, and usually felt all over the body. Tetanus is known as “lockjaw” because the muscles in the head and neck may tighten. This makes it harder to open one’s mouth, swallow, or even breathe.

To protect against these three diseases, most children are given 5 shots between the ages of 2 months and 6 years. If vaccination was not done during early childhood, one dose of the Tdap vaccine is given at age 11 or 12. A booster vaccine for tetanus and diphtheria (Td) should be given every 10 years. People on dialysis need to receive the Tdap vaccine and Td booster for protection against these diseases.

### Other Vaccines

There are many other vaccines recommended for people receiving dialysis, including measles, mumps, and rubella (MMR), varicella (chickenpox), meningococcus, and human papilloma virus (HPV). There is also a vaccine to protect against hepatitis A virus (HAV), which attacks the liver. It can be very serious and can spread to make other people sick. Hepatitis A is spread through close personal contact and by eating contaminated food or water.

## Vaccination Schedules

There are certain times when you should get vaccinated. You may have received some of these vaccines when you were younger. You may only need one dose of a vaccine, or more than one dose of the same vaccine. Some vaccines are given if you travel, so check with your healthcare provider before any planned trips. The following table lists vaccines that are recommended for people on dialysis and the number of doses. Check with your healthcare provider about the vaccines you already received or the ones you might still need.

VACCINES RECOMMENDED FOR ADULTS ON DIALYSIS*	
Vaccine	Dosage
Flu (influenza)	1 dose per year
Hepatitis B virus (HBV)	3 doses Ask your healthcare provider about timing and dosage**
Hepatitis A virus (HAV)	2 doses
Pneumococcal Pneumonia (2 types of vaccines)	1 or 2 doses Ask your healthcare provider about timing and spacing
Tetanus, diphtheria, pertussis (Td/Tdap)	1-time dose of Tdap, then Td booster every 10 years
Measles, mumps, and rubella (MMR)	1 or 2 doses
Human papillomavirus (HPV)	Female: 3 doses up to age 26 Male: 3 doses up to age 21
Haemophilus influenzae type b (Hib)	1 or 3 doses
Varicella (Chickenpox)	1 dose
Meningococcal (meningitis)	Use if needed, 1 or more doses (dependent on patient)

\*Centers for Disease Control and Prevention (CDC)

\*\*People on dialysis might need more shots or a higher dose.

## What if I have more questions?

Talk to your healthcare provider if you have more questions about vaccines and dialysis. You can also contact the following organizations.

### National Kidney Foundation

30 East 33rd Street

New York, NY 10016

NKF CARES information help line: 1.855.NKF.CARES  
(1.855.653.2273)

**[nkfcares@kidney.org](mailto:nkfcares@kidney.org)**

**[www.kidney.org](http://www.kidney.org)**

### Centers for Disease Control and Prevention (CDC)

1600 Clifton Road

Atlanta, GA 30329

1.800.232.4636 (1.800.CDC.INFO)

**[www.cdc.gov/vaccines/default.htm](http://www.cdc.gov/vaccines/default.htm)**

### Immunization Action Coalition

2550 University Avenue West, Suite 415 North

Saint Paul, MN 55114

651.647.9009

**[www.immunize.org](http://www.immunize.org)**

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The **National Kidney Foundation** is the leading organization in the U.S. dedicated to the awareness, prevention, and treatment of kidney disease for hundreds of thousands of healthcare professionals, millions of patients and their families, and tens of millions of Americans at risk.

Help fight kidney disease. Learn more at **[www.kidney.org](http://www.kidney.org)**



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