

March 2019- National Kidney Month

A note from the author—

Happy March NCP friends! This month, I am featuring an article to PREVENT disease and PROMOTE health and wellness, as opposed to an article detailing a specific disease or condition. All of the organs in your body have essential duties and functions that impact your health and wellness. One of the most common organs to suffer from disease or as a result of neglect is the kidneys. This month, read more about your kidneys, find out what they do, and discover how and why it is so important to protect them.



What is National Kidney Month?

March is National Kidney Month. It's a time to raise awareness about kidney health. It's also a time to share facts about ways to keep your kidneys happy and healthy.

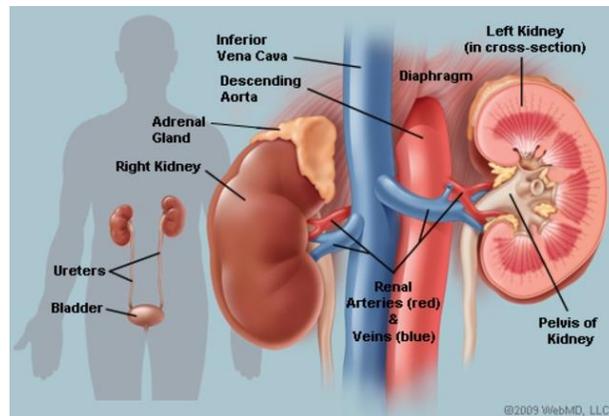
1 in 3 Americans is at risk for kidney disease due to diabetes, high blood pressure or a family history of kidney failure according to the National Kidney Foundation (NKF). Over 26 million Americans already have a kidney disease, and most don't even know it because there are no symptoms until the disease has progressed.

It's estimated that 1 in 10 Americans will have a Kidney Stone at some point in their life. Although there is no "one-size-fits-all" diet for preventing kidney stones, drinking plenty of water each day is one of the best ways to prevent kidney stones from forming. Other common health problems that impact the kidneys are kidney cancer and kidney failure.



What are the Kidneys?

The kidneys are two bean-shaped organs, each about the size of a fist. They are located just below the rib cage, one on each side of your spine.

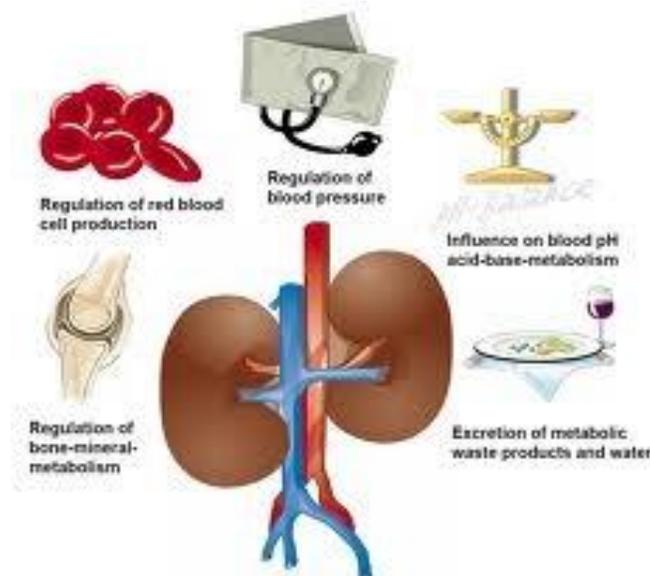


What is the role of the Kidneys in the body?

Healthy kidneys filter about a half cup of blood every minute, removing wastes and extra water to make urine. The urine flows from the kidneys to the bladder through two thin tubes of muscle called ureters, one on each side of your bladder. Your bladder stores urine. Your kidneys, ureters, and bladder are part of your urinary tract.

Functions of the kidneys include:

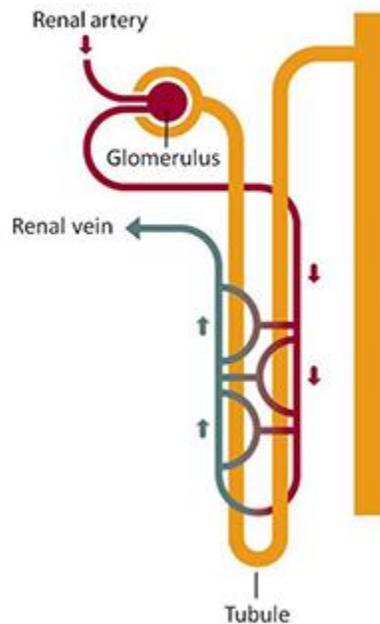
- Filtering waste out of 200 liters of blood each day.
- Regulating of the body's salt, potassium and acid content.
- Removing of drugs from the body.
- Balancing the body's fluids.
- Releasing hormones that regulate blood pressure.
- Producing an active form of vitamin D that promotes strong, healthy bones.
- Controlling the production of red blood cells.



How do the Kidneys Work?

Each of your kidneys is made up of about a million filtering units called nephrons. Each nephron includes a filter, called the glomerulus, and a tubule. The nephrons work through a two-step process: the glomerulus filters your blood, and the tubule returns needed substances to your blood and removes wastes.

The Nephron



The glomerulus filters your blood

As blood flows into each nephron, it enters a cluster of tiny blood vessels—the glomerulus. The thin walls of the glomerulus allow smaller molecules, wastes, and fluid—mostly water—to pass into the tubule. Larger molecules, such as proteins and blood cells, stay in the blood vessel.

The tubule returns needed substances to your blood and removes wastes

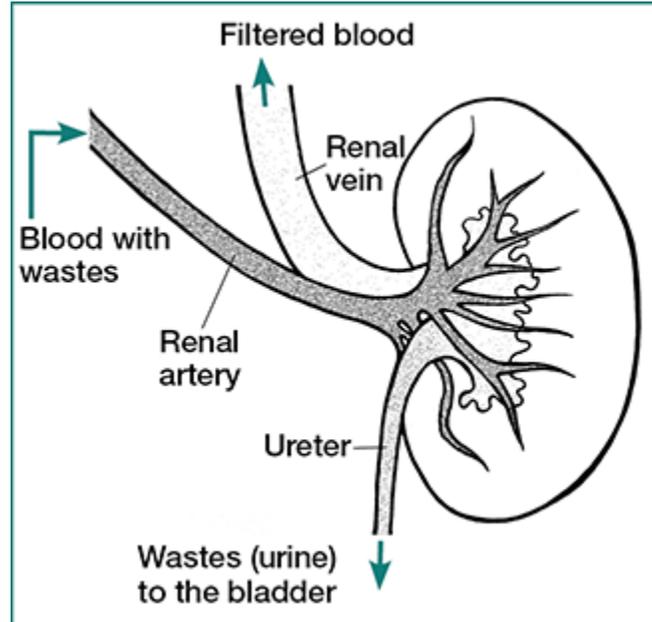
A blood vessel runs alongside the tubule. As the filtered fluid moves along the tubule, the blood vessel reabsorbs almost all of the water, along with minerals and nutrients your body needs. The tubule helps remove excess acid from the blood. The remaining fluid and wastes in the tubule become urine.

How does Blood Flow through your Kidneys?

Blood flows into your kidney through the renal artery. This large blood vessel branches into smaller and smaller blood vessels until the blood reaches the nephrons. In the nephron, your blood is filtered by the tiny blood vessels of the glomeruli and then flows out of your kidney through the renal vein.

Your blood circulates through your kidneys many times a day. In a single day, your kidneys filter about 150 quarts of blood. Most of the water and other substances that

filter through your glomeruli are returned to your blood by the tubules. Only 1 to 2 quarts become urine.



The Importance of the Kidneys

Your kidneys remove wastes and extra fluid from your body. Your kidneys also remove acid that is produced by the cells of your body and maintain a healthy balance of water, salts, and minerals—such as sodium, calcium, phosphorus, and potassium—in your blood.

Without this balance, nerves, muscles, and other tissues in your body may not work normally.

Your kidneys also make hormones that help

- control your blood pressure
- make red blood cells
- keep your bones strong and healthy

What is the Prevalence of Kidney Disease?

Chronic kidney disease (CKD) is a condition that can be found in 1 out of every 7 adults (age 18 or older) in the United States. National Kidney month seeks to bring attention to CKD, as well as people with end stage renal disease (ESRD) who need dialysis or a kidney transplant.

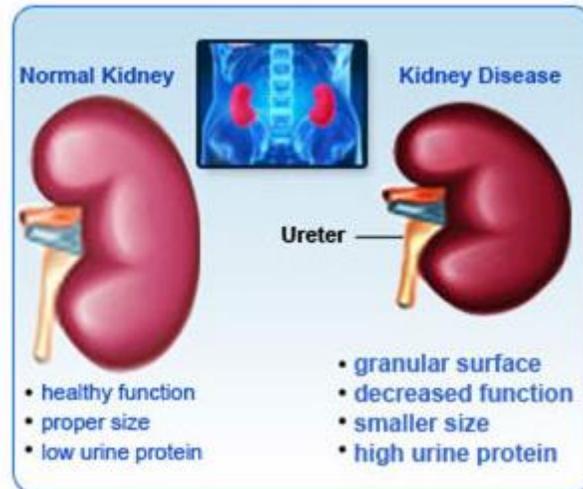
The Facts About Kidney Disease

Here are some quick facts about kidney disease:

- Kidney disease is the 9th leading cause of death in the country.
- More than 30 million Americans have kidney disease, and most don't know it.
- There are over 95,000 people waiting for kidney transplants.
- More than 590,000 people have kidney failure in the US today.

How does Kidney disease develop?

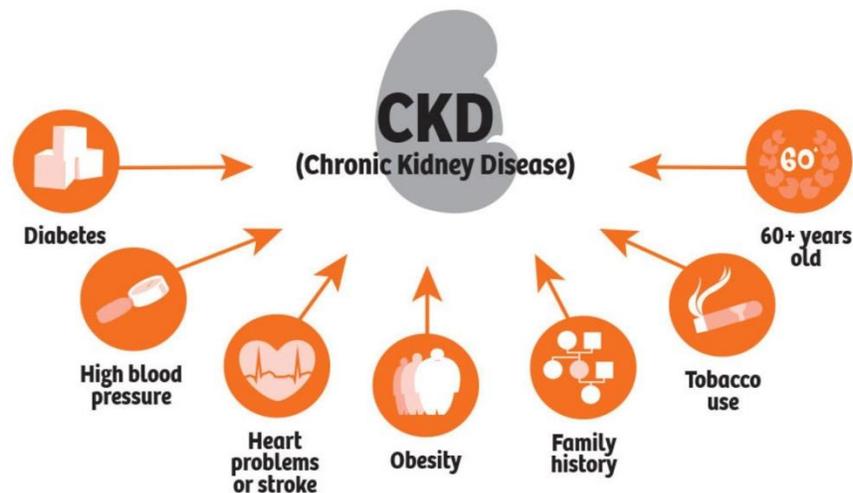
Kidney disease develops when kidneys lose their ability to remove waste and maintain fluid and chemical balances in the body. The severity of CKD depends on how well the kidneys filter wastes from the blood. It can progress quickly or take many years to develop. Because there are little to no signs of the condition, most people are not even aware that they have kidney disease until it reaches the later stages, including kidney failure.



Risk Factors Contributing to Kidney Disease

High-risk populations include those with diabetes, high blood pressure, cardiovascular disease and family history of kidney disease. Diabetes is the number one cause of kidney disease and high blood pressure is second leading cause (source: National Chronic Kidney Disease Fact Sheet, 2017); according to the U.S. Centers for Disease Control, 1 in 3 with diabetes and 1 in 5 with high blood pressure have kidney disease.

According to the U.S. Centers for Disease Control, African Americans are nearly 3 times more likely to be diagnosed with kidney failure compared to Caucasians. Other high-risk groups include Hispanics, Asian Americans, Pacific Islanders, Native Americans and seniors 65 and older.



Who should be screened for Kidney Disease?

Anyone 18 years old or older with diabetes, high blood pressure, cardiovascular disease or a family history of kidney disease should be screened for kidney disease. If you live in an area that is offering a free screening, plan to attend. If not, visit your doctor and ask that you be screened for chronic kidney disease.



Early Diagnosis- The Key to Treatment

If you have diabetes or high blood pressure, or a family history of kidney failure or heart disease, you are at greater risk for kidney disease. The sooner you find out you have kidney disease, the sooner you can get treatment. By getting treatment early, you may be able to prevent or delay more serious health problems.

Chronic kidney disease is a serious condition that affects more than 30 million adults in the United States, yet people in the early stages may not have symptoms. Many people don't find out they have kidney disease until their kidneys are permanently damaged, which is why you should get tested early.

Diagnosing Kidney Disease

Many Americans know nothing about kidney disease—until it's too late. "Unlike many diseases, kidney disease often has no symptoms until it is very advanced," says Andrew Narva, M.D., Director of the National Kidney Disease Education Program (NKDEP) a part of the NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). "For this reason and others, it is important for people to not only

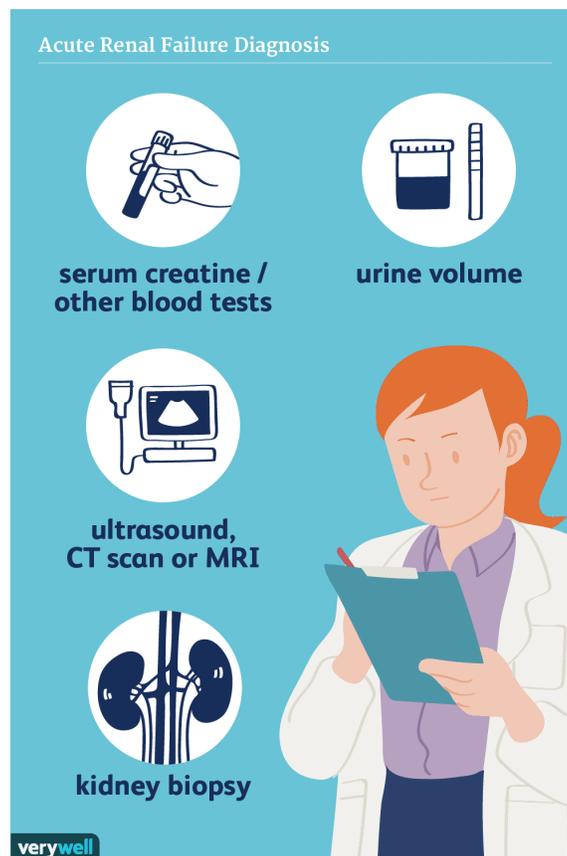
become aware of their risk, but also to learn about the steps they can take to keep their kidneys healthier longer. An important step is to get tested."

That testing is even more important for populations that are at higher risk for kidney disease, such as African Americans, adds Dr. Narva. Your doctor can do very simple tests to check for kidney disease:

- Measure the level of serum creatinine in your blood to estimate your glomerular filtration rate (GFR)
- Measure the level of protein in your urine (increased levels of protein show your kidneys are not working right)
- Check your blood pressure.

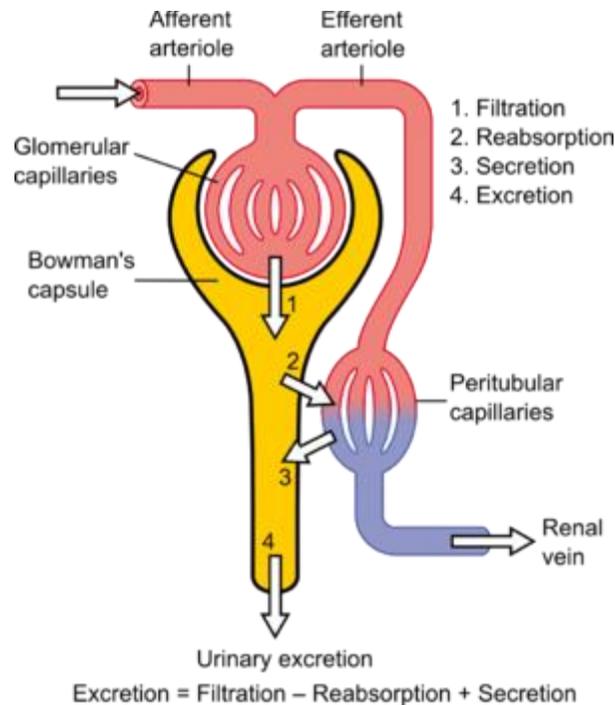
How can you tell if you are at risk for kidney disease? Ask yourself these questions:

- Do you have diabetes (problems with your blood sugar)?
- Do you have high blood pressure?
- Do you have heart disease?
- Did your mother, father, sister, or brother have kidney disease? (Kidney disease runs in families.)



If you answered "yes" to any of these questions, you are at risk for kidney disease. Now is the time to get tested. Your health care provider will order two simple tests to check your kidneys—a blood test to check your glomerular filtration rate (GFR) and a urine test to check for protein.

- **GFR**—A blood test measures how much blood your kidneys filter each minute, which is known as your GFR (glomerular filtration rate). This shows how well your kidneys are working. A GFR of 60 or higher is in the normal range. A GFR below 60 may mean you have kidney disease. You can't raise your GFR, but you can try to keep it from going lower.
- **Urine Protein**—A urine test checks for protein in your urine, which can be a sign of kidney disease. Protein can leak into the urine when the filters in the kidneys are damaged. This test has several different names, including a check for "proteinuria," "albuminuria," or "microalbuminuria." It can also be called a "urine albumin-to-creatinine ratio."



Because there are often no symptoms of kidney disease, laboratory tests are critical. When you get a screening, a trained technician will draw blood that will be tested for creatinine, a waste product. If kidney function is abnormal, creatinine levels will increase in the blood, due to decreased excretion of creatinine in the urine. Your glomerular filtration rate (GFR) will then be calculated, which factors in age, gender, creatinine and ethnicity. The GFR indicates the person's stage of chronic kidney disease which provides an evaluation of kidney function.

Treating Chronic Kidney Disease

Kidney disease is usually a progressive disease, which means that the damage in the kidneys tends to be permanent and can't be undone. So it is important to identify kidney disease early before the damage is done. The good news is that kidney disease can be treated very effectively if it is caught in the early stages. This is very important, since kidney disease also makes your risks for heart disease and stroke higher.

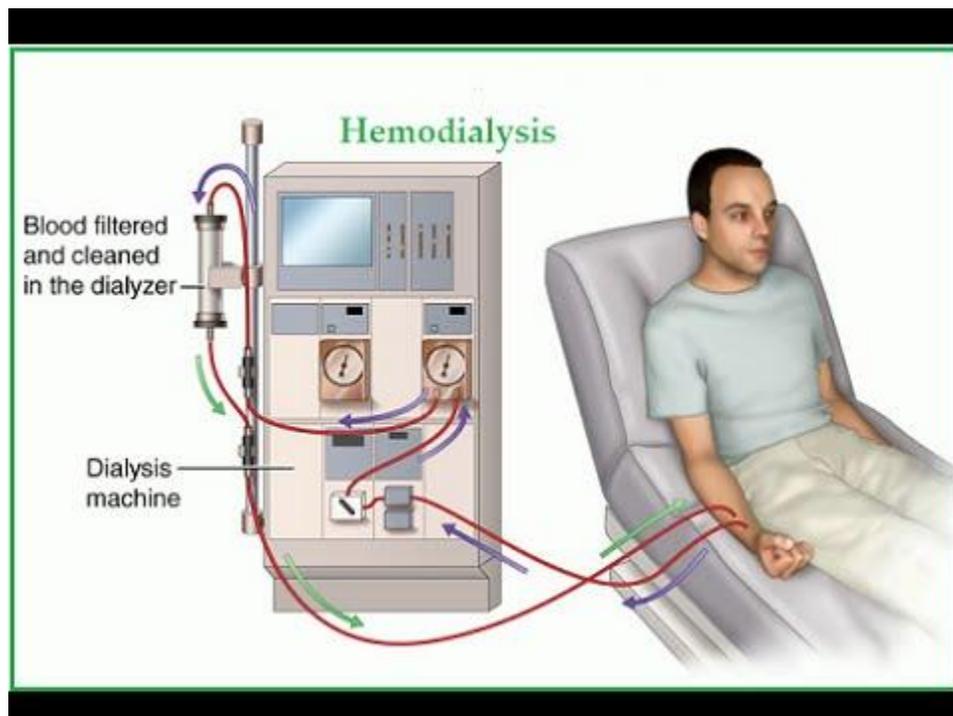
In many cases, kidney failure can be prevented or delayed through early detection and proper treatment of underlying diseases, such as diabetes and high blood pressure to slow additional damage to the kidneys. Also helpful are an eating plan with the right amounts of sodium, fluid and protein. Additionally, one should exercise and avoid dehydration. Treating diabetes and high blood pressure will slow additional damage to kidneys.

For people who have diabetes, monitoring blood glucose levels is very important. Your health care provider can help you find the right device for doing this if you are diagnosed with diabetes.

Controlling blood pressure is also very important for people with kidney disease. There are several types of medicine that help people keep their blood pressure in a healthy range. Two kinds of medicines, ACEi (angiotensin converting enzyme inhibitors) and ARBs (angiotensin receptor blockers) also help to protect the kidneys.

Kidney Failure

If one or both kidneys fail completely and the damage can't be reversed, the condition is called kidney failure or end-stage renal disease (ESRD). When this occurs, your kidneys can no longer filter wastes well enough to keep you healthy. The symptoms for ESRD include fatigue, weakness, nausea, vomiting, and itching.

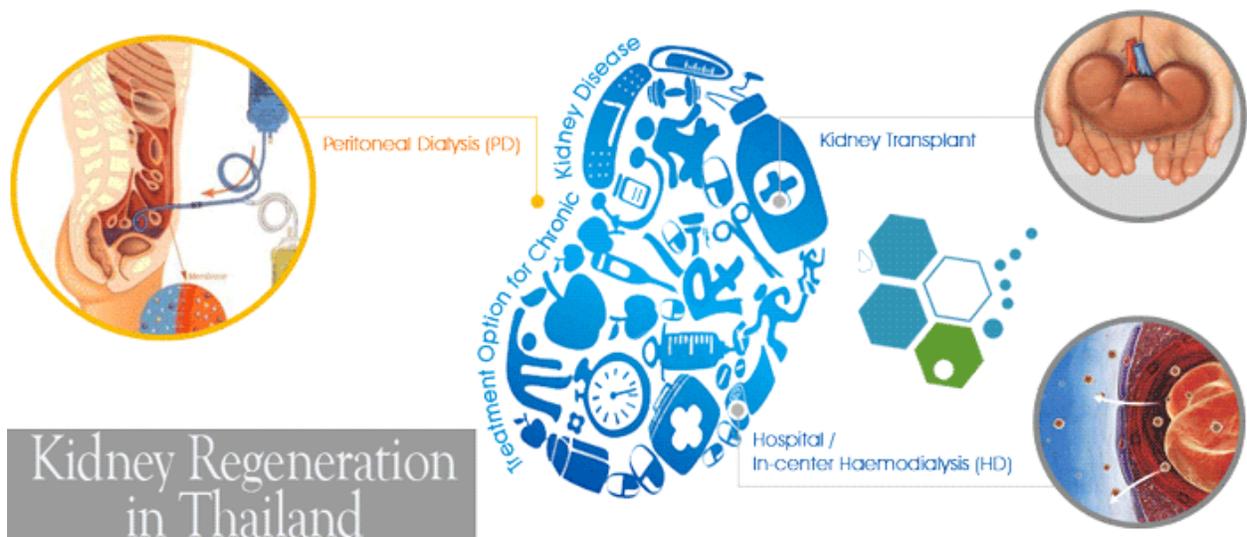


Treatments for kidney failure include dialysis or transplantation.

- Dialysis is a treatment that removes wastes and excess fluid from blood when the kidneys are not able to do it on their own. Typically, It is necessary upon development of kidney failure — usually by the time an individual loses about 85-

90 percent of kidney function. There are over 380,000 people (including children) in the United States who depend on hemodialysis or peritoneal dialysis (PD) treatments to stay alive. There are two major types of dialysis:

- In hemodialysis, blood is run through an external filter and the clean blood is returned to the body. Hemodialysis is usually done at a dialysis center three times a week.
- Peritoneal dialysis uses the lining of your abdominal cavity (the space in your body that holds organs like the stomach, intestines, and liver) to filter your blood. This kind of dialysis is needed daily but it can be performed at home, while you sleep.
- A kidney transplant is an operation that places a healthy kidney in your body. The transplanted kidney takes over the work of the two kidneys that failed, and you no longer need dialysis.



Clinical Trials

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and other components of the National Institutes of Health (NIH) conduct and support research into many diseases and conditions.

What are clinical trials, and are they right for you?

Clinical trials are part of clinical research and at the heart of all medical advances. Clinical trials look at new ways to prevent, detect, or treat disease. Researchers also use clinical trials to look at other aspects of care, such as improving the quality of life for people with chronic illnesses. Find out if clinical trials are right for you .

What clinical trials are open?

Clinical trials that are currently open and are recruiting can be viewed at www.ClinicalTrials.gov

Resources

www.kidney.org

https://www.kidney.org/news/monthly/Focus_KidneyMonth

<https://www.niddk.nih.gov/health-information/communication-programs/nkdep/get-involved/national-kidney-month>

<http://www.urologyhealth.org/careblog/march-is-national-kidney-month-x3078>

<https://www.davita.com/education/kidney-disease/risk-factors/march-is-national-kidney-month>

<https://www.niddk.nih.gov/health-information/kidney-disease/kidneys-how-they-work>

<https://medlineplus.gov/magazine/issues/winter08/articles/winter08pg9-10.html>