



What is Nephrology?

Nephrology (from the Greek: *nephros*, "kidney"; and *λόγος*, *logos*, "speech," to talk about kidneys") is a branch of internal medicine and pediatrics, which deals with the study of the function of the kidney and all the diseases that may affect it.

What does a nephrologist do?

A nephrologist, also known as a renal physician or a kidney doctor, is a specialist, who after receiving a medical degree, has completed three years of specialty training in internal medicine and at least two years of further training in the medical treatment of patients with kidney diseases. This training qualifies the nephrologist to diagnose and treat all kidney diseases comprehensively, as such diseases may affect the function of other body organs as well.

Nephrologists also deliver all forms of dialysis or kidney replacement

therapy and therapeutic plasma exchange.

Many patients with kidney disease require medications, and your nephrologist will adjust these medications according to the level of your kidney function.

One of the primary activities of a nephrologist is using the artificial kidney machine to treat patients with acute and chronic kidney failure, which is known as dialysis or renal replacement therapy.



The Virtual Nephrologist

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Who needs a nephrologist?

A patient may be referred to a nephrologist by their family physician, another internist, or any other healthcare provider, such as a nurse practitioner (APRN), or a physician assistant (PA). Other subspecialists, such as cardiologists, vascular or general surgeons, or obstetricians, may also refer patients.

Typically, irregularities in blood or urine test results due to the kidney dysfunction are the reason for referrals.



Does a nephrologist perform surgery?

No. A nephrologist does not perform surgery. However, they may need to perform a kidney biopsy by inserting a narrow needle through the body surface to obtain a sample of kidney tissue. In contrast, a urologist is a doctor who specializes in surgery of the kidneys and the urinary system, including the bladder and the prostate.

Will I still need my primary care provider (PCP)?

The answer is definitely **YES**. From time to time, you may develop illnesses that can be treated by your primary care provider. It is important to inform your primary care provider about the nature of your kidney disease and all medications you may be taking. Each medication has unique effects that might influence the way other medications interact. By sharing this information, the nephrologist can avoid adverse effects that could result from medication interactions.



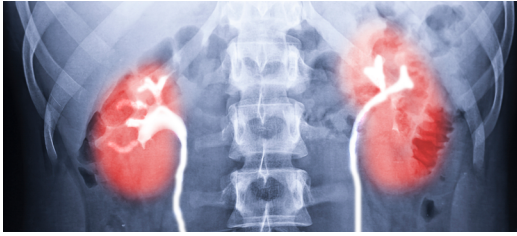
Patients may be referred to nephrologists for various reasons, including:

- **Hematuria** (blood in the urine)
- **Chronic Kidney Disease (CKD)**, characterized by progressive and slowly declining renal function, usually with a rise in serum creatinine and reduced e-GFR (glomerular filtration rate)
- **Proteinuria**, the spilling of protein, especially albumin, in the urine
- **Kidney stones**, usually recurrent stone formers
- **Hypertension** (high blood pressure) that has failed to respond to multiple forms of anti-hypertensive medications or has an underlying secondary cause
- **Electrolyte** disorders or acid-base imbalance
- The care of **dialysis** patients, including hemodialysis or peritoneal dialysis
- Medical care after **kidney transplant**
- Acute renal failure, which is a sudden loss of kidney function
- Other rare forms of kidney disease, like **polycystic kidney disease** or **glomerulonephritis**





Chronic Kidney Disease (CKD)



I have been referred to a nephrologist for a consultation. **What happens next?**

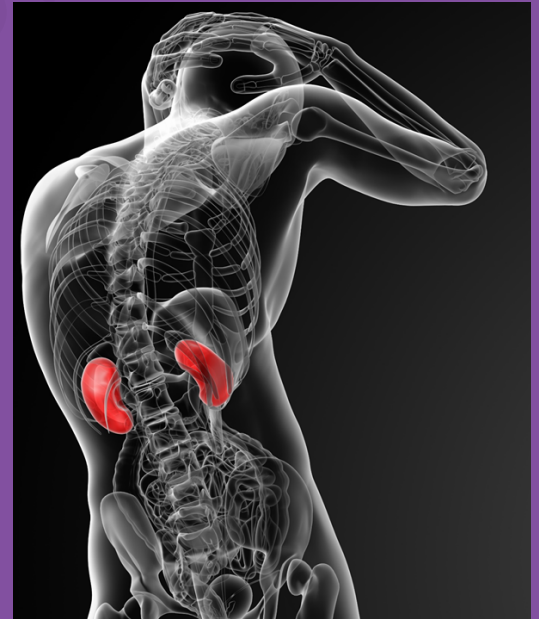
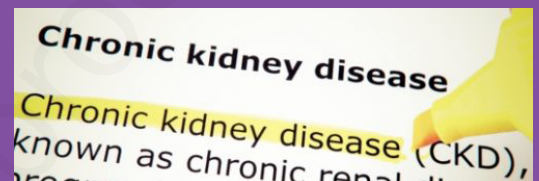
Like all physicians, the nephrologist takes a comprehensive history and performs a thorough physical examination of each patient because kidney diseases can affect other organs, and a kidney disease also may be a manifestation of a systemic (whole-body) disease. The nephrologist may order various tests, including a urinalysis, urine cultures, 24-hour urine collection, blood tests, and kidney ultrasound or other imaging tests. In some cases, the nephrologist may recommend a kidney biopsy in the hospital before beginning treatment. After starting treatment, the nephrologist observes the patient at intervals to assess the response. The duration of this observation depends on the patient's condition. For chronic kidney disease, a continued long-term relationship will be required, with the frequency of the visits determined by the nature and severity of the disease.

What treatment methods for my kidney disease are available?

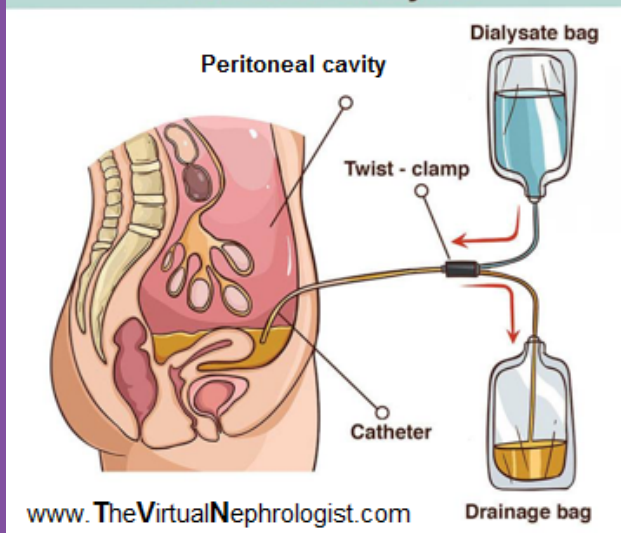
The primary goal of a nephrologist when treating patients with kidney disease is to preserve kidney function for as long as possible. There are many potential treatments for kidney diseases depending on the patient's specific condition. Treatment options may include medications designed to control inflammation of the kidneys. Sometimes, certain medications may need to be discontinued since they may harm the kidney, such as ibuprofen or proton pump inhibitors, like omeprazole or Prilosec. Depending on the specific disease process, dietary interventions may also be appropriate. Tight control of high blood pressure is critically important in almost all kidney diseases to preserve kidney function. Control of diabetes and other risk factors such as cholesterol and smoking are also very important.

There are several treatment options available for patients with end stage renal disease (ESRD) or complete kidney failure. One of these options is hemodialysis, which involves using an artificial kidney machine to perform the functions of a normal kidney. It does not "jumpstart" the kidneys. Hemodialysis is a lifesaving treatment for patients with end stage renal failure and is typically required three times a week, with each session lasting three to five hours. It can be performed in a hospital, outpatient hemodialysis clinic, or at home with proper training for the patient and a family member.

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Peritoneal dialysis



A second form of treatment available is peritoneal dialysis. In peritoneal dialysis (PD), a special fluid is run in and out of the patient's abdominal cavity, with membranes within the abdomen acting to remove the toxins. This is also called continuous ambulatory peritoneal dialysis.

Patients with ESRD or end stage renal disease must continue dialysis indefinitely unless they receive the gift of life, which is a kidney transplant. A transplanted kidney may come from a living donor or from a donor who has recently died, which is called a cadaveric kidney transplant. In this case the donor or their family had designated the kidneys for transplantation.

If your condition requires either dialysis or transplantation, your nephrologist will explain the details to you. In case you receive a kidney transplant, your nephrologist may assist in your post-transplant care to manage your blood pressure, medication interactions, and other issues that may arise.

Sometimes, hemodialysis is required for a short period of time in cases of acute renal failure, which can occur due to an acute precipitating event, such as shock. Typically, kidney function resolves on its own, but dialysis is necessary during this crucial period until the underlying issue is resolved. In this case, dialysis is not intended to "jumpstart" the kidneys, but rather to support the patient until recovery, when the kidneys will hopefully recover on their own.

Can the nephrologist give me a routine physical checkup?

Certainly. As a nephrologist is also a trained internist, he or she is capable of performing a comprehensive physical examination and ordering all the necessary diagnostic tests as part of their everyday practice. Some nephrologists prefer to see only patients referred from another healthcare provider, while others may conduct regular examinations without referrals. During an examination, if a condition is discovered that falls outside the scope of nephrology, the nephrologist may arrange for the patient to seek the services of another physician.



What about my care when my nephrologist is not available?

If your nephrologist is not available, another nephrologist or a similarly trained physician will take care of you. In case of emergencies, always call 911 or go to the nearest emergency room.