HEALTH BASICS

Renal and urological diseases

An umbrella term for conditions affecting the kidneys, urinary tract, and related organs.

WHAT IT IS
An umbrella term for kidney and urinary tract conditions

WHERE IT COMES UP
During diagnoses, urine tests, blood tests, scans, or referrals

WHY IT MATTERS
These conditions can affect waste removal, urination, and fluid balance

WHAT IT IS NOT
Not a single disease or diagnosis

WHO TO ASK
Primary care clinician, nephrologist, urologist, or continence service

HOW IT IS CHECKED
History, examination, urine and blood tests, imaging, or procedures

Overview

"Renal and urological diseases" is not one disease or diagnosis. It is a broad category covering many conditions involving the kidneys and urinary system.

"Renal" means related to the kidneys. The kidneys filter the blood, control fluid and mineral levels, and make urine.

"Urological" usually refers to the urinary tract in people of any sex. It can also include the male reproductive system. The urinary tract consists of the kidneys, ureters, bladder, and urethra. The ureters carry urine to the bladder, while the urethra carries it out of the body.

Kidney specialists are called nephrologists. They mainly manage problems involving kidney function, blood pressure, and the balance of fluids and minerals. Urologists are surgeons who assess structural or physical problems of the urinary tract and male reproductive organs. Some conditions involve both specialties.

How it works

Most people have two kidneys, located toward the back of the upper abdomen. Blood flows

through tiny filtering units inside each kidney. These units remove waste and extra water while keeping substances the body needs.

The kidneys also help:

Urine made by the kidneys travels down the ureters and collects in the bladder. The bladder stores urine until it is convenient to pass it. Muscles and nerves coordinate bladder emptying. The urethral sphincter, a ring of muscle around the urine outlet, helps prevent leakage.

Problems may begin in the kidney tissue, urine drainage system, bladder, prostate, urethra, nerves, or supporting pelvic muscles. For example, reduced kidney filtering is different from a blockage that prevents urine from leaving the bladder, even though either problem may affect blood and urine test results.

Kidney function is often estimated using a blood test for creatinine, a waste product made by muscles. The result is used to calculate an estimated glomerular filtration rate, or eGFR. A urine albumin-to-creatinine ratio, or ACR, checks for albumin, a blood protein that can leak into urine when kidney filters are damaged.

One unusual result does not always establish a diagnosis. Results may need to be repeated or interpreted alongside previous tests, medicines, symptoms, and other health conditions.

- regulate blood pressure
- balance minerals such as sodium and potassium
- maintain the body's acid balance
- support red blood cell production
- activate vitamin D for bone health

Why it matters for your health

The kidneys and urinary tract have different but connected roles. Kidney conditions can affect fluid balance, blood pressure, mineral levels, red blood cell production, and the removal of waste. Urinary tract conditions can interfere with storing or passing urine and may cause pain, leakage, infection, or blockage.

Some conditions develop suddenly. Others progress slowly and may first be noticed through blood pressure checks, blood tests, urine tests, or imaging.

The specific diagnosis matters because treatment is not the same for every condition. An infection may require a different approach from a kidney stone, an enlarged prostate, urinary leakage, or long-term loss of kidney function.

Medicines can also affect the kidneys or urinary system. The relevance of a medicine depends on the drug, your kidney function, other conditions, and whether you are dehydrated. Do not stop a prescribed medicine solely because it mentions kidney or urinary effects. Ask a clinician or pharmacist how the information applies to you.

What can go wrong

Kidney diseases include acute kidney injury, which is a sudden decline in kidney function, and chronic kidney disease, which means kidney abnormalities have been present for an extended period. Diabetes, high blood pressure, inflammation, inherited conditions, infections, medicines, and urinary blockage can all be relevant, but they are not interchangeable causes.

Glomerulonephritis affects the kidneys' microscopic filters. Polycystic kidney disease causes multiple fluid-filled cysts and can run in families. Kidney cancer begins when abnormal cells grow within kidney tissue.

Urological conditions include urinary tract infections, kidney or ureter stones, urinary incontinence, overactive bladder, urinary retention, bladder pain conditions, and narrowing of the urethra. Urinary retention means the bladder does not empty fully or a person cannot pass urine.

In people with a prostate, benign prostate enlargement may restrict urine flow. "Benign" means non-cancerous. Prostate cancer is a separate condition.

Cancers can also affect the bladder, ureters, urethra, testicles, or penis. Blood in urine has many possible causes, including infection and stones, but it can also be linked to cancer. It should be medically assessed rather than attributed to a cause without testing.

Routine follow-up is appropriate for stable conditions, planned repeat tests, or ongoing monitoring arranged by your care team. Contact a clinician promptly if you develop visible blood in the urine, new trouble passing urine, ongoing pain when urinating, new swelling, or a marked change in urinary habits.

Seek urgent same-day care for a complete inability to pass urine, severe side or back pain with fever, repeated vomiting, or rapidly worsening illness. Use emergency services for difficulty breathing, fainting, new confusion, or blood clots blocking urine flow. These signs can occur with serious infection, obstruction, bleeding, or major fluid and mineral disturbances.

What you can do

If a report uses this term, ask what specific organ, test result, or diagnosis it refers to. "Renal

and urological diseases" alone is too broad to explain what is happening or what follow-up is needed.

Useful questions include:

Keep copies of relevant creatinine, eGFR, urine ACR, scan, and pathology results when available. Looking at results over time can be more useful than focusing on one number. Record the date and any circumstances that may have affected the result, such as an acute illness.

For urinary concerns, a short bladder diary may help. Record when and how much you drink, when you urinate, leakage episodes, sudden urges, and nighttime trips. If measuring urine is impractical, recording timing and general amount can still provide useful information.

Tell clinicians about prescription medicines, over-the-counter products, and supplements. This is especially important before scans that may use contrast material and before starting medicines that can require kidney-based dose adjustment. A clinician or pharmacist can check the individual product and your current kidney function.

There is no single test that checks for every renal or urological disease. Depending on the concern, assessment may include blood pressure measurement, blood and urine tests, an ultrasound or other scan, urine-flow testing, bladder pressure studies, or cystoscopy. Cystoscopy uses a small camera to look inside the bladder and urethra.

If you have no symptoms, risk factors, or abnormal results, there may be nothing specific for you to do. General screening and follow-up should be based on your health history rather than this umbrella term alone.

- What is the exact diagnosis or suspected condition?
- Is the concern kidney function, urine drainage, bladder control, or another organ?
- Should a blood or urine test be repeated?
- Do I need imaging or a specialist assessment?
- Could any of my medicines affect this result?
- Which changes should prompt urgent help?

Common questions

Are kidney disease and urological disease the same?

No. They overlap, but kidney disease usually refers to problems affecting kidney structure or function. Urological disease includes physical and surgical conditions involving urine storage,

urine flow, and related organs.

Does an abnormal eGFR mean chronic kidney disease?

Not by itself. eGFR is an estimate based partly on blood creatinine. Clinicians consider how low it is, whether it remains abnormal over time, urine findings, and other evidence of kidney damage.

Can urine look normal when there is a problem?

Yes. Some kidney conditions do not visibly change urine. Blood or protein may be detectable only on laboratory testing. Conversely, a temporary change in urine colour can have non-disease causes, including foods, medicines, or dehydration.

Why might I see both a nephrologist and a urologist?

A condition can affect both kidney function and urine drainage. For example, a urinary blockage may require a urologist to address the obstruction and a nephrologist to help manage its effect on kidney function.

Are urinary symptoms always caused by infection?

No. Burning, frequency, urgency, leakage, or difficulty passing urine can have several causes. Urine testing and, when needed, further assessment help distinguish infection from stones, bladder conditions, prostate problems, or other causes.

Is visible blood in urine an emergency?

It needs prompt medical assessment, but it is not always an emergency. Seek emergency help if bleeding produces clots that stop urine flow, or if it occurs with fainting, severe weakness, or other signs of serious illness.

Sources

- National Institute of Diabetes and Digestive and Kidney Diseases: Your Kidneys & How They Work
- National Institute of Diabetes and Digestive and Kidney Diseases: Chronic Kidney Disease Tests and Diagnosis
- National Institute of Diabetes and Digestive and Kidney Diseases: Urinary Retention
- National Institute for Health and Care Excellence: Chronic kidney disease-assessment and management, NG203
- NHS: Blood in urine

- Kidney Disease: Improving Global Outcomes: 2024 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease