



Education

Pyelonephritis (Kidney Infection)

What is pyelonephritis?

Pyelonephritis is a bacterial infection of the kidney. It can be serious because of the important function of the kidneys and because the infection may enter the bloodstream. It can also cause pregnant women to go into labor too early (called premature labor).

Kidney infections are much more common in women than men.

How does it occur?

Most kidney infections result from lower urinary tract infections, usually bladder infections.

Bacteria can travel from the vagina or rectal area (anus) into the urethra and bladder. The urethra is the tube that empties urine from the bladder. A woman's urethra is short, about 2 inches long, and is just above the vagina. Because of the location and short length of the female urethra, women are more likely to have bladder infections than men.

In men the urethra extends the full length of the penis. Infections of the lower urinary tract in men can occur with prostate infections.

Lower urinary system infections may spread to the kidneys, causing pyelonephritis. When you have a bladder infection, it is harder for your body to stop urine from flowing back to the kidneys. This problem can allow infected urine to move into the kidneys.

The urinary system is a common site of birth defects. If your urinary system is abnormal, you have a greater risk that a bladder infection will spread to the kidneys.

If you have blockage from a kidney stone, you are at risk of developing pyelonephritis.

What are the symptoms?

The symptoms range from mild to severe. They may include:

- fever
- chills or sweats
- abdominal or back pain
- loss of appetite
- nausea or vomiting
- problems with urination, such as pain when you urinate or having a frequent urge to urinate.

Sometimes it is hard to know whether urinary symptoms are caused by an infection of the lower urinary tract (for example, the bladder) or by a kidney infection. These symptoms should not be ignored. If you have symptoms, see your health care provider right away. A bladder infection can rapidly progress to pyelonephritis and infection in the bloodstream. Do **not** allow the symptoms to continue for several days before you seek treatment.

How is it diagnosed?

Your health care provider reviews your medical history, looking especially for current or recent lower urinary tract infection. You will also have a physical exam, especially to check for pain in the kidney area. A sample of your urine

will be tested in the lab.

How is it treated?

Antibiotic medicine is the main treatment for a kidney infection. Your health care provider may treat you first as an outpatient. You may continue to be treated at home if your symptoms appear to be getting better 24 hours after you start taking the medicine. If you are more seriously ill or dehydrated, or the medicine does not seem to be working well, you may need to stay in the hospital. There you can be given fluids and medicine with an IV.

Usually you will need to take an antibiotic for at least 7 days. All bacteria must be killed to prevent kidney damage and to keep the infection from coming back.

Your antibiotic may need to be changed after the first day or two of treatment if lab tests of the bacteria in your urine show a different antibiotic will work better. Your health care provider will tell you if this is the case.

How long do the effects last?

How long it takes to recover depends on how severe your symptoms are when you start treatment. In mild cases, symptoms get better in the first 1 or 2 days. More severe infections take several days before you begin to feel better.

With proper treatment there are few complications of pyelonephritis. If your symptoms return soon after you finish your treatment, you may need more tests. Your health care provider will check for an underlying cause, such as a kidney stone.

How can I take care of myself?

- Notice whether your symptoms get better once you start taking the antibiotic.
- Drink a lot of fluids.
- Take all your medicine according to your health care provider's instructions, even when you begin to feel better.
- Tell your health care provider right away about any symptoms that get worse or come back.

What can be done to help prevent pyelonephritis?

Most cases of pyelonephritis in women result from bladder infections. The best way to prevent kidney infections is to try to prevent bladder infections. Ways women can try to prevent these infections are:

- Drink plenty of water and other noncaffeinated drinks. (Caffeine can cause the body to lose fluids.)
- Practice good hygiene when you use the toilet. For example, wipe from front to back.
- Avoid using irritating cosmetics or chemicals in the area of the vagina and urethra (such as strong soaps, scented napkins, or panty liners).
- Urinate to empty your bladder after you have sexual intercourse.

There are no specific preventive measures for men other than drinking plenty of fluids and practicing good genital hygiene. If you are a man who has not been circumcised, good hygiene includes gently pulling back the foreskin to wash the tip of the penis every time you bathe or shower.

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Kidney

