Creatinine Clearance

Does this test have other names?

CRCL, CCT

What is this test?

This test measures how well your kidneys are working and how well blood is flowing to them. Creatinine is a waste product that comes from normal muscle use and from meat protein in your diet. Healthy kidneys remove creatinine from the blood. It then passes out of your body through urine.

The creatinine clearance test usually compares the creatinine level in a 24-hour urine sample with the creatinine level in your blood. This tells your healthcare provider how well your kidneys are working. Creatinine clearance also helps your healthcare provider estimate your glomerular filtration rate. This is the amount of blood cleaned each minute by tiny filters in your kidneys called glomeruli.

Why do I need this test?

You may need this test if you have symptoms that might be caused by kidney disease. Signs and symptoms include:

- Pain near the kidneys
- Swelling or puffiness, especially around the eyes and ankles
- High blood pressure
- Low amount of urine or trouble urinating
- Dark or foamy urine
- Blood in the urine
- Pain in the midback

You may also need this test if the results of other blood or urine tests suggest that you may have a problem with your kidneys.

If you have already been diagnosed with kidney disease, your healthcare provider can use this test regularly to watch your kidney function and adjust your treatment if needed. If you have a disease that affects the kidneys, you may have this test to look for any changes in your kidney function. This includes diseases, such as:

- Diabetes
- High blood pressure
- Congestive heart failure

What other tests might I have along with this test?

You may also have a blood urea nitrogen (BUN) test. If your BUN level is high, it's a sign that your kidneys may not be working as they should.

You may also have other tests to see how much protein is leaking from your kidneys into your urine.

You may also have an ultrasound, computed tomography (CT) scan, or other imaging test done of your kidneys.

What do my test results mean?

Test results may vary depending on your age, gender, health history, and other things. Your test results may be different depending on the lab used. They may not mean you have a problem. Ask your healthcare provider what your test results mean for you.

Results are given in milliliters per minute (mL/min). The range for a normal test result depends on your age and gender. For adults younger than 40, normal levels are in these ranges:

- 110 to 150 mL/min for men
- 100 to 130 mL/min for women

Creatinine clearance rates go down as you age.

An abnormal creatinine clearance rate may mean you have a problem with your kidneys. Or it may mean a problem somewhere else in your body is affecting blood flow to the kidneys.

How is this test done?

This test is done with samples of blood and urine.

For the blood sample, a needle is used to draw blood from a vein in your arm or hand.

For a 24-hour urine test, you must collect all of your urine for 24 hours. Empty your bladder completely first thing in the morning without collecting it. Note the time. Then collect your urine every time you go to the bathroom over the next 24 hours.

Does this test pose any risks?

Having a blood test with a needle has some risks. These include bleeding, infection, bruising, and feeling lightheaded. When the needle pricks your arm or hand, you may feel a slight sting or pain. Afterward, the site may be sore.

Giving a urine sample has no known risks.

What might affect my test results?

The 24-hour urine sample has to be exact. This means all urine must be collected and correctly stored during the test period. Otherwise, the test results may not be accurate. This is a common problem with the creatinine clearance test. Many healthcare providers use a formula based on your blood creatinine levels alone to estimate the GFR.

If you are pregnant or have recently done intense exercise, such as running a marathon, your creatinine clearance rate could be higher than normal.

Certain medicines can cause creatinine clearance levels to be lower than normal. These include cimetidine and certain antibiotics. Certain conditions, such as diabetes and congestive heart failure, may also affect the results.

How do I get ready for this test?

You don't need to prepare for this test. Tell your healthcare provider about all medicines, herbs, vitamins, and supplements you are taking. This includes medicines that don't need a prescription and any illegal drugs you may use.