

Urine Test (Urinalysis)

What you need to know

Urinalysis is simply a test of your urine (pee). Urine is a waste product of the kidneys. Your doctor may want to do a urine test to help find the cause of your symptoms. A urinalysis includes tests for:

- infection
- blood
- protein
- sugar

Your doctor will use this information to identify a bladder or kidney infection, diabetes, certain types of kidney disease, and other conditions.

How should I get ready for the test?

Certain medicines can change the color of your urine, but this is not a sign of disease. Your doctor may ask you to stop taking medicines for a short period. Ask your doctor about any medicines that might affect test results.

How will the test feel?

You won't feel any discomfort – all you need to do is urinate in a container.

Why is the test done?

Your doctor may do a urine test:

- As part of a physical exam.
- To check for a specific disease, or for an infection of your urinary tract. Symptoms of an infection may include colored or bad-smelling urine, pain when urinating, hard to urinate, pain in your side or back, blood in the urine, or fever.
- To check the treatment of conditions such as diabetes, kidney stones, a urinary tract infection (UTI), high blood pressure (hypertension), or some kidney or liver diseases.

How is the test done?

If your doctor asks you to give a urine sample, you will collect your urine midstream in a clean, dry container. The medical assistant will probably give you antiseptic wipes along with any instructions you'll need. To make sure that the test is accurate, both men and women should wipe their genital area (front to back) before collecting the urine sample. (If a baby needs a urine sample, it is usually collected with a special plastic bag.) Sometimes, urine samples are collected by putting a catheter (small tube) into the bladder. If you are asked to collect a urine sample at home, it's best to put the urine sample in the refrigerator, until bringing it to the lab.

What does it test for?

The lab technician will look at many different elements of the urine. The kidneys take out waste material, minerals, fluids and other substances from the blood and pass them in the urine. Urine has hundreds of different waste products that your body doesn't need. What you eat and drink, how much you exercise, and how well your kidneys work can all affect what is in your urine. Some foods (beets, blackberries, rhubarb or asparagus) and vitamins (B-12) can change the color of your urine. There are three basic steps to a complete urine test:

1. Physical color and appearance:
 - What does the urine look like?
 - Is it clear or cloudy?
 - Is it pale or dark yellow or another color?
2. Microscopic appearance:
 - What does the urine look like under a microscope?
 - Are there blood cells, urine crystals, mucus, and other substances?
 - Are bacteria or other microorganisms present?
3. Chemical appearance:
 - A special stick ("dipstick") tests for different substances in the urine.
 - The dipstick is a plastic strip with chemical pads that change color when they come into contact with certain substances.

A dipstick tests for five substances:

1. **Glucose (a type of sugar).** Urine should be free of glucose. If the lab technician finds glucose, it may be due to uncontrolled diabetes. Or the kidneys might be damaged or diseased.
2. **Bilirubin and Urobilinogen.** The liver produces Bilirubin and Urobilinogen as it processes red blood cells. If either of these is present in the urine, your doctor may suspect a liver problem.
3. **Ketones.** The body makes ketones when a person is fasting or having nutritional problems during an illness. Ketones are passed through the urine. Large amounts of ketones may mean a very serious condition called diabetic acidosis.
4. **Blood.** Blood cells are usually not found in the urine. Blood in the urine may be caused by inflammation, disease, or injury to the kidneys, ureters, bladder, or urethra. Hard exercise, such as running a marathon, can also cause blood in the urine.
5. **Nitrites.** Bacteria that cause a urinary tract infection (UTI) make an enzyme that changes nitrates to nitrites. Finding nitrites in the urine means that it's likely that you have a UTI.

Your doctor can help you decide if any abnormal tests are significant. Whatever your test finds, you'll want to talk with your doctor about the results.



Other resources

- Connect to our Web site at **kp.org** to access health and drug encyclopedias, interactive programs, health classes, and much more.
- Check your *Kaiser Permanente Healthwise Handbook*.
- Contact your Kaiser Permanente Health Education Center or Department for health information, programs, and other resources.

This information is not intended to diagnose health problems or to take the place of medical advice or care you receive from your physician or other health care professional. If you have persistent health problems, or if you have additional questions, please consult with your doctor.