

Interpreting Laboratory Test Results

A laboratory test is a medical procedure in which a sample of blood, urine, or other tissues or substances in the body is checked for certain features. Such tests are often used as part of a routine checkup to identify possible changes in a person's health before any symptoms appear. Laboratory tests also play an important role in diagnosis when a person has symptoms. In addition, tests may be used to help plan a patient's treatment, evaluate the response to treatment, or monitor the course of the disease over time.

Laboratory test samples are analyzed to determine whether the results fall within normal ranges. They also may be checked for changes from previous tests. Normal test values are usually given as a range, rather than as a specific number, because normal values vary from person to person. What is normal for one person may not be normal for another person. Many factors (including the patient's sex, age, race, medical history, and general health) can affect test results. Sometimes, test results are affected by specific foods, drugs the patient is taking, and how closely the patient follows pre-test instructions. That is why a patient may be asked not to eat or drink for several hours before a test. It is also common for normal ranges to vary somewhat from laboratory to laboratory.

Some laboratory tests are precise, reliable indicators of specific health problems. Others provide more general information that simply gives doctors clues to possible health problems. Information obtained from laboratory tests may help doctors decide whether other tests or procedures are needed to make a diagnosis. The information may also help the doctor develop or revise a patient's treatment plan. All laboratory test results must be interpreted in the context of the overall health of the patient and are generally used along with other exams or tests. The doctor who is familiar with the patient's medical history and current condition is in the best position to explain test results and their implications. Patients are encouraged to discuss questions or concerns about laboratory test results with the doctor.

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Related NCI materials and Web pages:

- National Cancer Institute Fact Sheet 5.16, *Pap Test*
(<http://www.cancer.gov/cancertopics/factsheet/Detection/Pap-test>)
- National Cancer Institute Fact Sheet 5.18, *Tumor Markers: Questions and Answers*
(<http://www.cancer.gov/cancertopics/factsheet/Detection/tumor-markers>)
- National Cancer Institute Fact Sheet 5.29, *Prostate-Specific Antigen (PSA) Test*
(<http://www.cancer.gov/cancertopics/factsheet/Detection/PSA>)
- National Cancer Institute Fact Sheet 5.33, *Pathology Reports: Questions and Answers*
(<http://www.cancer.gov/cancertopics/factsheet/Detection/pathology-reports>)
- *What You Need To Know About™ Cancer*
(<http://www.cancer.gov/cancertopics/wyntk/cancer>)

How can we help?

We offer comprehensive research-based information for patients and their families, health professionals, cancer researchers, advocates, and the public.

- **Call** NCI's Cancer Information Service at 1-800-4-CANCER (1-800-422-6237)
- **Visit** us at <http://www.cancer.gov> or <http://www.cancer.gov/espanol>
- **Chat** using LiveHelp, NCI's instant messaging service, at <http://www.cancer.gov/livehelp>
- **E-mail** us at cancergovstaff@mail.nih.gov
- **Order** publications at <http://www.cancer.gov/publications> or by calling 1-800-4-CANCER
- **Get help** with quitting smoking at 1-877-44U-QUIT (1-877-448-7848)

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