Reference Results and Values

A healthcare provider will determine what is normal for a specific patient by comparing that patient's results with the results of other people of the same age. The provider will also consider what the patient was doing just before the test was conducted. For example, the patient's typical pulse reading is 70, which is within the reference range. However, a reading of 100 would be normal if the patient just ran up the stairs because he or she was late for the appointment. In the same way, a person who runs regularly may have a typical pulse reading of 55 or 60.

Reference results can be as simple as *yes* or *no*. A positive result on a strep test means that yes, the bacteria is present. Other test results use a range of numbers. For example, the reference value for a chemical urine test of pH is 4.5 to 8.0. Reference ranges are determined by comparing test results from a large number of people. These ranges consider age, gender, and health status. A pregnant woman, for example, has a different set of reference ranges than anyone else because pregnancy affects body chemistry. Physicians also consider individual factors such as current medications, diet, or caffeine intake when interpreting lab test results.

Reference Values for Substances in Urine

Substance Tested	Reference Value
glucose	negative
billirubin	negative
ketones	negative
blood	negative
pH	4.5 to 8.0
protein	negative to trace
urobilinogen	0.1 to 1.0 mg/dL
bacteria (nitrite)	negative
leukocyte esterase	negative
specific gravity	1.005 to 1.030

In some tests, the normal or reference range is irrelevant. Instead, staying below a cut-off value or decision point is considered a normal reading. For example, a cholesterol level of 200 milligrams per deciliter (mg/dL) is the cut-off point at which heart disease risk should trigger medical intervention. A reading below 200 mg/dL is considered normal for a person with no history of heart disease.