

Range of Vital Signs

Vital Sign	Normal	Serious	Critical
<p>Blood Pressure</p> <p>Blood pressure is an indicator of the heart's ability to pump blood throughout the body. It is measured at an artery and is usually represented as two numbers such as 125/85.</p> <p>Systolic pressure (top number) is the pressure created when the heart is contracting and pumping blood. Diastolic pressure (the bottom number) is the pressure between contractions when the heart relaxes and fills.</p>	110/70 to 140/90 mm Hg	90-100 mm Hg systolic	< 90 mm Hg Systolic
<p>Resting Pulse</p> <p>Pulse is the rate (how fast or slow) at which the heart is beating. It provides clues to how well the heart is functioning and how well blood is carrying oxygen and other important substances to the tissues, including the tissues of the brain.</p>	60-100 beats/min	<60 or >100 beats/min	<50 or >120 beats/min
<p>Temperature</p> <p>Body temperature indicates whether the body's thermal regulation is working. An elevated body temperature could indicate an infection. A depressed central body temperature, or <i>core</i> temperature, indicates a type of shock.</p>	37 *C (98.6 *F)	39-40 *C (102.2-104 *F)	>40 *C (>104 *F)
<p>Breathing Rate</p> <p>Rate of breathing reflects how well oxygen is being delivered to the body. It also is associated with the heart rate and circulation.</p>	10-20 resp./min	<10 or >20 resp./min	<5 or >30 resp./min
Blood Tests are needed to test the following vital levels			
Cholesterol	131-239 mg/dL	<131 or >250 mg/dL	>300 mg/dL
Glucose	65-120 mg/dL		
Chloride (Cl⁻)	96-109 mEq/dL		
Sodium (Na⁺)	135-145 mEq/L		
Potassium (K⁺)	3.5-5.3 mEq/L		

Taken together, the measurements of vital signs give the physician a very quick view of a patient's internal state, even if the patient is unconscious and cannot explain how they feel. These measurements vary over a relatively narrow range in healthy people, indicating that the body has precise control of normal internal conditions. When the vital signs are far outside these ranges, homeostasis usually is disrupted in the patient. Under these circumstances the vital signs are direct indicators of problems with homeostatic systems. Vital signs, however, usually do not indicate the *cause* of the disruption of homeostasis.

Units Key:

mm Hg: millimeters of mercury, a measure of pressure

mg/dL: milligrams per deciliter, a measure of concentration

mEq/L: milliequivalents per liter, a measure of concentration

Notes: The figures quoted above are simplified guidelines, based on those used by medical personnel. More precise ranges for different age groups and sexes also are used. Occasionally healthy individuals have "normal" readings that are outside these average ranges. For example, many young people have systolic blood pressure lower than 100 mm Hg. For the purpose of this activity, you should assume that the normal state for each patient is within the normal ranges listed in the table.