

## Bloodwork Meanings and Reference Ranges

“CBC, chem seven, stat!” This may sound familiar if you watch such popular television shows as *ER* and Animal Planet’s *Emergency Vets*. But do you know what the terms mean? Blood tests help doctors determine causes of illness accurately, safely, and quickly, and let us monitor the progress of medical treatments. To help you understand your cat’s test results, this guide will explain common tests and reference ranges.

### **CBC – Complete Blood Count**

Abbreviation	Full name	Explanation	Normal reference ranges
WBC	white blood cells	Measures immune cells. Increases or decreases can indicate certain immune diseases or infections.	5.5 – 19.5
RBC	red blood cells	Measures the number of circulating red blood cells. May be increased with stress.	5.00 – 15.0
HCT	hematocrit	Measures the percentage of red blood cells in blood to detect anemia and dehydration. May be increased with stress.	25.0 – 45.0
PLT	platelets	Measures the number of cells that form blood clots.	200 – 500
Segs	segmented neutrophil	A type of white blood cell that engulfs blood pathogens.	35 – 75%
Bands	band neutrophils	Immature white blood cell.	0 – 3%
Lymphs	lymphocytes	A type of white blood cell that is related to immune function. Can see increases with stress or anxiety.	20 – 55%
Monos	monocytes	A type of white blood cell that engulfs foreign substances in the blood.	1 – 4%
Eos	eosinophils	A type of white blood cell that, if in increased numbers, can point to allergies or parasitism.	2 – 12%
Basos	basophils	Rare type of white blood cell. May be associated with heartworm disease, allergies, and other conditions.	0 – 1%

### **Blood Serum Chemistries, Electrolytes, and Endocrinology**

Abbreviations	Full name	Explanation	Normal reference ranges
ALB	albumin	Helps evaluate hydration, hemorrhage, and intestinal, liver, and kidney disease.	2.3 – 3.9
ALKP	alkaline phosphatase	Elevations may indicate liver damage, Cushing's disease, and active bone growth in young pets.	14 – 111
ALT	alanine aminotransferase	A sensitive indicator of active liver damage but doesn't indicate the cause.	12 – 130
AMYL	amylase	Elevations show pancreatitis or kidney disease. Not always significant in cats.	500 – 1500
BUN	blood urea nitrogen	Indicates kidney function. Increased blood level is called azotemia and can be caused by kidney, liver, and heart disease, urethral obstruction, shock, and dehydration.	16 – 36

Ca	calcium	Deviations can indicate a variety of diseases. Tumors, hyperparathyroidism, kidney disease, and low albumin are just a few of the conditions that alter serum calcium.	7.8 – 11.3
CHOL	cholesterol	Used to supplement diagnosis of hypothyroidism, liver disease, Cushing's disease, and diabetes mellitus. May be elevated and not be significant.	65 – 225
CREAT	creatinine	Reveals kidney function. This test help distinguish between kidney and non-kidney causes of elevated BUN.	0.8 – 2.4
GLU	glucose	A blood sugar. Elevated levels may indicate diabetes mellitus. Low levels can cause collapse, seizures, or coma. May be increased due to fight/flight response.	71 – 159
PHOS	phosphorus	Elevations are often associated with kidney disease, hyperthyroidism, and bleeding disorders.	3.1 – 7.5
TBILI	total bilirubin	Elevations may indicate liver or hemolytic disease. This test helps identify bile duct problems and certain types of anemia.	0.5 – 0.9
TP	total protein	Indicates hydration status and provides information about the liver, kidneys, and infectious diseases.	5.7 – 8.9
Cl	chloride	An electrolyte often lost with vomiting and Addison's disease. Elevations often indicate dehydration.	112 – 129
K	Potassium	An electrolyte lost with vomiting, diarrhea, or excessive urination. Increased levels may indicate kidney failure, Addison's disease, dehydration, and urethral obstruction. High levels can lead to cardiac arrest.	3.5 – 5.8
Na	sodium	An electrolyte lost with vomiting, diarrhea, and kidney or Addison's diseases. This test helps indicate hydration status.	150 – 165
T4	thyroxin	A thyroid hormone. High levels indicate hyperthyroidism in cats.	0.5 – 5.8

### ***Other Important Blood Testing***

FeLV	feline leukemia	An immunodeficiency disease caused by a retrovirus in cats.	Negative
FIV	feline immunodeficiency virus	An immunodeficiency disease caused by a retrovirus in cats.	Negative

Isn't it amazing that all this important information about your cat's health can be found by using less than 1 teaspoon of blood? So much can learned from these numbers to help you and your veterinary team take the best possible care of your feline friend.

We hope this guide helps explain what all these lab tests indicate for your cat. If you have any questions regarding your cat's lab work, please feel free to call or email us:



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