

## 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:



**The Cat Practice** pc

875 South Worth  
 Birmingham, Michigan 48009  
 (248) 540-3390 Fax (248) 540-3503  
[www.thecatpracticepc.com](http://www.thecatpracticepc.com)