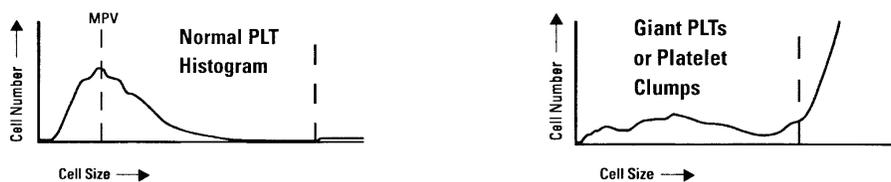


An Explanation of the Vet ABC Histogram

The histogram is a graphic representation of cell size versus cell number. The Vet ABC provides histograms for WBCs, RBCs and platelets. The cell size is on the X-axis and the cell number is on the Y-axis. With RBCs and platelets, the histogram can be used to determine the average cell size and the variation in cell size. The variation in RBC cell size is expressed as the red blood cell distribution width (RDW). The average RBC cell size is expressed as the mean corpuscular volume (MCV). The average platelet cell size is expressed as the mean platelet volume (MPV). A sharp, narrow curve informs the doctor that the cells are all about the same size. A broad curve informs the doctor that there are abnormally large or small cells present. A common reason for an increase in the RDW and MCV is the presence of an increased number of immature red blood cells (reticulocytes). Reticulocytes would be present if an animal is responding to an anemia. A common reason for an increase in the MPV is the presence of an increased number of immature platelets. Immature platelets would be present if an animal is responding to a thrombocytopenia.



The platelet histogram is useful for evaluating cat blood samples. Cat platelets are naturally variable in size and also tend to clump together after the blood is drawn. The problem can be visualized on the platelet histogram to the right below. The dashed line to the right of the platelet curve represents the division between the platelet measuring area and the RBC measuring area. In the histogram to the left, the curve rises then returns to baseline. Also, it does not extend into the RBC area. In the histogram to the right, which is a cat sample, the sample contains giant platelets and clumped platelets, which give the curve its characteristic shape.



The Vet ABC also provides a three part WBC differential. The WBC differential is obtained by using the WBC histogram. The reagents in the pack cause the different WBC cell types to change their size. Each cell type changes differently in response to the reagents. The lymphocytes shrink dramatically, the monocytes shrink moderately and the granulocytes shrink the least. The analyzer is then able to differentiate between them. The cells are then plotted on a histogram, just like the RBCs and platelets. The cells to the left on the histogram are lymphocytes, the cells in the center are monocytes and the cells to the right are granulocytes.

