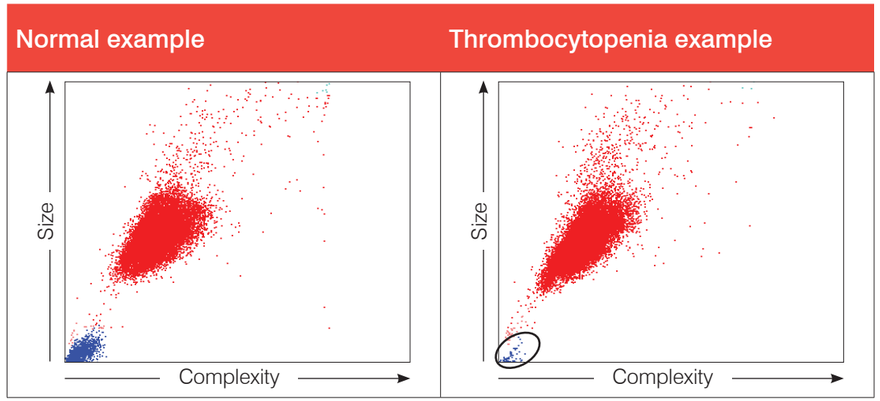
Interpreting ProCyte One* Equine Dot Plots

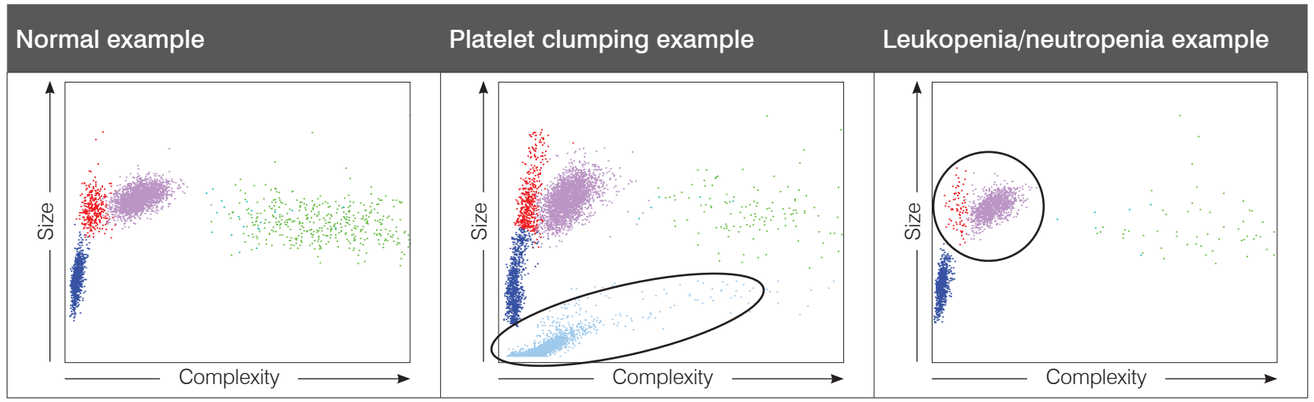
Red blood cell and platelet dot plots



Red blood cells
RBC fragments

Platelets
White blood cells

White blood cell dot plots



Neutrophils
Lymphocytes
Basophils

Monocytes
Eosinophils
Clumped platelets

What are dot plots?

Dot plots are a visual representation of the complete blood count (CBC); each dot represents a single cell. Dot plots are a critical element of the CBC, providing a snapshot of cellular morphology. This document will help you identify various equine disease states.

What are the disease states?

Thrombocytopenia

Thrombocytopenia can be a critical finding in a complete blood count (CBC), so rapid validation of results from the hematology analyzer is essential. In red blood cell and platelet dot plots, severe thrombocytopenia is easily validated. Normally, there is a dense accumulation of blue dots representing platelets. During thrombocytopenia, the density of the blue dots is reduced. Review the white blood cell (WBC) dot plots for evidence of platelet clumping and/or review a blood film to investigate if platelet clumps are the cause of the low platelet count.

Platelet clumping

Platelet clumping is a common problem in veterinary medicine. Any time a difficult sample collection results in a delay in filling the EDTA tube or delay in proper mixing, there is a potential for platelet clumping. There are different degrees of platelet clumping, and most advanced analyzers recognize large platelet clumps. When platelet clumps are identified and the platelet count is below the reference interval, you'll receive a message alerting you to the presence of platelet clumps. A rapid review of the dot plots provides you with a very quick validation if large platelet clumps are present. Large platelet clumps are recognized as a light blue cluster of digitized events at the bottom of a white blood cell (WBC) dot plot. A rapid blood film review can also allow for quick recognition of large platelet clumps and verification of results reported. If platelet clumps are reported or observed on a blood film, collection of a new sample for analysis is recommended.

Leukopenia/neutropenia

Leukopenia (decreased total leukocyte count) and, in particular, neutropenia (decreased neutrophil count) often indicate overwhelming inflammatory disease or possible effects of chemotherapy, and immediate recognition is critical. Marked decreases in leukocytes can be rapidly validated by examining the WBC dot plots. Decrease in an isolated WBC cell type such as the neutrophil is evident in a decrease in the density of the particular cell cluster. In the example, note the decreased density of the lavender dots representing individual neutrophils as well as the decreased density of the monocyte cloud.

For more information about ProCyte One dot plots, contact IDEXX Customer and Technical Support or visit **learn.idexx.com**.