

Thrombocytopenia in Cats and Dogs

Thrombocytopenia is a common finding in CBC results. While smear examination is important in all patients, it is vital in those with low platelet count to verify the count, detect platelet clumps and examine platelet morphology.

Normal counts in dogs range from ~150-400 x 10⁹/L and in cats from ~200-600 x 10⁹/L. However normal ranges are analyser and breed dependent. Healthy Greyhounds, Poodles and Cavalier King Charles Spaniels may have platelet counts which are lower than reference.

In general, platelet counts between 100 x 10⁹/L and the reference interval are considered mildly decreased, and counts <25 x 10⁹/L reflect severe thrombocytopenia. The severity of a thrombocytopenia can narrow the list of differentials, and determine whether haemorrhage is likely. Patients with mild to moderate thrombocytopenia are not at risk of bleeding if that is their only problem. Platelet counts < 50 x 10⁹/L may cause bleeding following trauma or surgery. Platelet counts < 20 (cats) or <25 (dogs) x 10⁹/L can cause spontaneous haemorrhage.

Differentials for Thrombocytopenia

Differentials for Thrombocytopenia	Range	Most common
Increased consumption may develop in DIC, rodenticide toxicity and vasculitis	Normal to severe	
Splenic sequestration	Mild	
Post vaccination	Mild	
Breed related	Mild to moderate	Mild
Increased loss due to haemorrhage	Mild to moderate	Mild
Artefact	Mild to severe	Mild
Drug induced	Mild to severe	
Decreased production associated with bone marrow disease	Moderate to severe	
Increased destruction due to immune mediated thrombocytopenia	Moderate to severe	Severe

Clots forming in the syringe during blood collection are a common cause for thrombocytopenia.

Drugs which have been associated with thrombocytopenia include phenobarbitone, carprofen, methimazole, Trimethoprim sulpha (TMS), some cephalosporins and several of the chemotherapeutic agents.

Blood smear examination for platelets

Examination of the blood smear starts at the feathered edge to look for platelet clumps. The presence of clumps invalidates the analyser count and makes severe thrombocytopenia unlikely. An estimation of platelet count in the monolayer is then evaluated by determining the average number of platelets over 10 fields using the 100x objective. Ten to 15 platelets per field indicate a relatively normal count and $> 3-4$ platelets per hpf provide sufficient platelets that bleeding is unlikely. Note this is an estimate only and there is significant room for error if blood smear examination skills are minimal.

Monitoring the Thrombocytopenic Patient

A CBC and blood smear should be examined daily until the platelet count is stable and then once or twice a week until the count is back to normal. A blood smear alone could be examined at some of these time points if a full CBC cannot be obtained.

