	Cytology	ACT	PTT	PT	BMBT	Platelets	MPV/PDW	FDPs/d-Dimers	Exam	Bone Marrow
Von Willebrand's Disease	Normal	Increased only if very severe	Increased only if severe	Normal	Prolonged	May have mild thrombocytopenia if hypothyroid	Normal	Normal	Any form of bleeding if severe	Not indicated
Hemophilia A (factor 8) and B (factor 9)	Normal	Prolonged when <5% factor	Prolonged when <30% factor	Normal	Normal, then Re-bleeding	Normal	Normal	Normal	Hematomas, body cavity bleeds, re-bleeding	Not indicated
Hagemann (factor 12) and Factor 11 Disease	Normal	Prolonged when <5% factor	Prolonged when <30% factor	Normal	Normal	Normal	Normal	Normal	Bleeding absent with 12 and mild with 11	Not indicated
Factor 7 Deficiency	Normal	Normal	Normal	Prolonged when <30% factor	Usually Normal	Normal	Normal	Normal	Hematomas, body cavity bleeds, re-bleeding	Not indicated
Factor X (10) Deficiency	Normal	Prolonged when <5% factor	Prolonged when <30% factor	Prolonged when <30% factor	Normal, then Re-bleeding	Normal	Normal	Normal	Hematomas, body cavity bleeds, re-bleeding	Not indicated
Liver Failure	acanthocytes	Prolonged if severe	Prolonged	Prolonged	Normal, then Re-bleeding	Normal	Normal	Increased if ATIII very low	Hematomas, body cavity bleeds, re-bleeding	Not indicated
Anticoagulant rodenticide	Normal	Prolonged if severe	Prolonged	Prolonged (most sensitive)	Mild – normal then re-bleeding Severe - Prolonged (not recommended)	Normal, or low if severe bleeding	Increased if chronic bleeding	Normal	Any form of bleeding if severe	Not indicated
DIC	Schistocytes	Prolonged	Prolonged	Prolonged	Prolonged	<150,000/ul	Increased if chronic bleeding	Increased	Any form of bleeding	Normal to increased megakaryocytes
Ehrlichia	May see *E Platys* in platelets	Normal to slightly prolonged (<10 sec)	Normal	Normal	Usually prolonged	<150,000/ul	Variable	Normal	Possible petechiae, ecchymoses, epistaxis due to vasculitis	Plasma cells
Immune mediated thrombocytopenia	Giant platelets	Normal to slightly prolonged (<10 sec)	Normal	Normal	May be prolonged if platelets <20,000/ul	Low, often < 20,000/ul	MPV Low	Normal	Bleeding is rare until end stage, then severe	Normal to increased megakaryocytes
Tpenia due to bone marrow dz	few platelets	Normal to slightly prolonged (<10 sec)	Normal	Normal	May be prolonged if platelets <20,000/ul	Low	MPV normal to high	Normal	Petechiae, epistaxis, ecchymoses, GI blood	Decreased megakaryocytes
thrombycytopathia	Otter hounds giant bizarre platelets	Normal to slightly prolonged (<10 sec)	Normal	Normal	Prolonged	Usually normal, Otter hounds low	MPV normal to high	Normal	Petechiae, epistaxis, ecchymoses, GI blood	Not indicated
Vasculitis	Giant platelets	Normal	Normal	Normal	Prolonged	Low	MPV normal to high	Normal	Petechiae, epistaxis, ecchymoses, GI blood	Normal to increased megakaryocytes

ACT = activated clotting time (less sensitive substitute for PTT)
BMBT = buccal mucosal bleeding time (assesses platelet and capillary function)
DIC = disseminated intravascular coagulopathy
FPDs = fibrin degradation products ,aka FSP = fibrin split products (screens for fibrinolytic activity)
MPV = mean platelet volume
PDW = platelet distribution width
PTT = activated partial thromboplastin time (assesses intrinsic and common coagulation pathways)
PT = prothrombin time (assesses extrinsic and common coagulation pathways)
Thrombocytopathia = platelet function defect (eg, von Willebrand's disease, paraneoplastic disease especially lymphoma, aspirin, congenital in Basset hounds, Otter hounds, Spitz, Great Pyrenees, and cocker spaniels)

Bleeding Times
--If you suspect a severe hemostatic problem such as rat poisoning or severe DIC, don't' do a BMBT (bleeding may never stop) and don't take blood from a jugular vein (hematoma can result in suffocation)

Platelets
--Platelets can be low any time there is active bleeding that is severe
--Platelet clumping at the feathered edge of the blood smear indicates that another sample needs to be taken, to get an accurate platelet count
--King Charles Cavalier Spaniels often have very large platelets, and low platelet counts, but this is rarely clinically significant, and all clotting tests are normal
  Platelet mass = platelet count x MPV, usually normal
--Large, bizarre platelets can be seen in Otter hounds with thrombasthenic thrombopathis and in cats with myeloproliferative disease
--Lipid droplets can falsely increase platelet count in lipemic animals
  RBC fragments can falsely increase platelet count in dogs with IMHA (immune mediated hemolytic anemia)
  Sharp spikes on the platelet histogram and low MPV suggest this error
--small RBC due to iron deficiency can be counted as platelets, MPV will be low
--dogs and cats with normal platelet counts will have at least 8-10 platelets per high power (100x) field
--antiplatelet and antimegakaryocytic antibodies can diagnose IMT (immune mediated thrombocytopenia) directly
--Platelet count must be less than 50,000/ul to cause spontaneous bleeding due to thrombocytopenia alone

Coagulation Factors
--intrinsic pathway – factors 8, 9, 11, 12, PF3
--extrinsic pathway – factor 7
--common pathway – 2, 5, 10, PF3, prothrombin, fibrinogen
--vitamin K dependent factors – 2, 7, 9, 10 (7 is most sensitive)
--Diagnose von Willebrand's by sending vW factor off to Cornell (transfusion will falsely increase), <30% at risk for bleeding
--PT or PTT shorter than usual are not clinically significant
--PT less than 3 seconds above normal and PTT less than 5 seconds above normal may not be clinically significant
--Hemophilia A abd B are sex linked (more common in males)

Vasculitis
--uremia, severe infection, rickettsial disease and immune mediated disease are the most common causes of vasculitis

FDPs and d-Dimers
--FDPs can be high any time there is chronic clot formation and breakdown – can happen with chronic bleeding, or diseases that cause hypercoagulable states (liver failure, protein losing enteropathy, Cushing's Disease, Immune mediated hemolytic anemia, etc.)
--d-Dimers are more specific for DIC than FDPs