



## Practical guide to diagnosing Coagulopathies: Part 1 - Primary Coagulation. Professor Bruce Parry.

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### Show notes

Primary coagulopathy: platelets play the main part.

Problems in primary generally cause petechial haemorrhage on mucous membranes, plus potentially subcutaneous bleeding. Not so much bleeding into cavities.

(Remember the **3 P's**: Primary - Platelets - Petechia)

Secondary coagulation - involves coagulation cascade - bleeding is internal - chest abdomen joints. Also potentially subcutaneous bleeds, so some overlap.

If unsure whether primary or secondary:

**Step 1:** Make a blood smear, look for platelets.

**If normal: 10-15 platelets per field under oil.**

Won't see clinical coagulopathy until you get to 40-50X10x9/L, in which case you'll see less than



## 2-3 platelets per oil field

**Pro tip:** Make fresh smears <10-15 minutes after taking blood.

**If you see >10-15 platelets per oil field then platelets are not the cause for the bleeding.**

If you think numbers are low then look for clumps in the feathered edge. If you see clumps you can presume that you have enough platelets.

Note: Cats have reactive platelets - more likely to have clumping EDTA does not stop platelet clumping, only slows it down!

**Protip:** Make your smear when you take blood, or when you place a catheter in case you need it later.

**Step 2:** Buccal Mucosal bleeding time test (MBT) if you still think it's a problem of primary coagulopathy. Good screening test.

How to do it and which tools to use: <http://eclinpath.com/hemostasis/tests/buccal-mucosal-bleeding-time/>

**Pro-tip:** A scalpel blade is not good enough- use the right tool. Simplate II Normal result < 4minuts.

Von Willebrand's Disease - 6, 7 or 8 minutes or longer.

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If BMBT is normal, then you've ruled out

1. VWD
2. Severe thrombocytopenia
3. Platelet function disorder (eg I NSAID - very mild, non clinical) and
4. Collagen disorders.

Most common cause of thrombocytopenia: immune mediated.

**Pro tip:** Bleeding is never the cause of thrombocytopenia. le you can never bleed enough to run low on platelets.



Other causes of non-clinical thrombocytopenia (ie low platelet numbers on machine with no clinical bleeding):

**Sedation**, like ACP or xylazine that expands the spleen.

**Modified live vaccines**, which can cause a temporary low platelet count for 2 to 10 days after vac.

**Sighthounds** - lower platelet numbers.

King Charles Cavalier Spaniels - low number but big size platelets. (macrocytopaenia).

**Pro tip:** if an animal is genuinely thrombocytopenic and you see big platelets it means marrow is trying to regenerate - strongly suggests immune mediated. Low numbers with small platelets - worry about bone marrow, like leukaemias.