

**Vetpath** is a specialist veterinary laboratory dedicated to providing our clients with the finest laboratory diagnostic service. A team of veterinary pathologists and medical scientists with extensive experience in veterinary diagnostic pathology forms the core of the Vetpath team.

# VN News

**DECEMBER 2016**

## Haematology - what the machines don't tell us

Valuable clinical information can be gained from a PCV and reviewing a peripheral blood smear - it could be argued that these are all that are required (with regards to haematology) in the initial assessment of most cases.

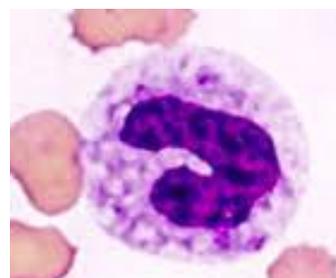
The former is relatively straight forward; however peripheral blood smear examination can be time-consuming and requires training and experience. With the availability and affordability of in-house blood testing, haematology results are easily obtained for emergency cases where turnaround time is

important in the management of the patient.

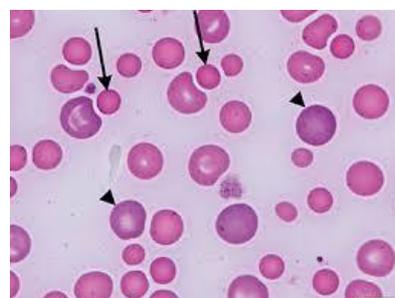
It is important to note that all haematology analysers, including the large commercial machines we use in our laboratory, have their limitations when it comes to providing quality results in all parameters measured. Vetpath still does manual differential white cell counts on the CBCs of all animals and each smear is also reviewed by a board-certified pathologist.

Changes that could be missed by haematology analysers include:

- Neutrophil left shifting and toxic changes (Figure 1).
- Immature or neoplastic cells.
- Mast cells.
- Reactive lymphocytes.
- Infectious agents.
- Platelet clumping and large platelets.
- Nucleated red cells and polychromasia.
- Heinz bodies.
- Agglutination.
- Poikilocytosis eg spherocytes (Figure 2), acanthocytes, schistocytes etc.



**Figure 1:** Toxic band neutrophil.



**Figure 2:** Spherocytes.

Many practices now use in-house haematology analysers that, for the most part, give reasonable results. However, the cornerstone of veterinary haematology remains the peripheral blood smear examination. Skipping this important step can lead to inaccurate results and failure to identify abnormalities that can help correctly diagnose your haematological disorders.

## Equine Glucose Tolerance Panel

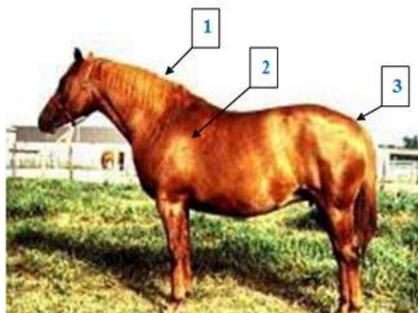
Equine Metabolic Syndrome (EMS) is a clinical syndrome affecting young to middle aged horses and ponies. The condition is characterized by a number of clinical and biochemical abnormalities that are similar to metabolic syndrome in humans.

Most patients with EMS have three distinguishing features:

1. General obesity or localised adiposity in the neck, shoulder and tail base.
2. Insulin resistance characterized by hyperinsulinaemia and hyperglycaemia.
3. A predisposition to laminitis.

Laboratory testing is useful for diagnosis of EMS, and most commonly includes endogenous ACTH, insulin and glucose concentrations. These three parameters are incorporated in the **Equine Cushing's/Metabolic Syndrome Screen** offered at Vetpath. Patients with EMS often have hyperglycemia and hyperinsulinaemia. ACTH concentrations are usually normal in these patients, while horses with pituitary pars intermedia dysfunction (PPID or Equine Cushing's disease) often

have increased ACTH concentrations.



**Figure:** Regional adiposity in the crest of neck (1), behind the shoulder (2) and tail base (3).

Performing a glucose tolerance test is a more sensitive test for EMS than a single insulin concentration. Vetpath is now offering a new panel to provide an economical way of screening horses and ponies for EMS. The **Equine Glucose Tolerance Panel** includes an endogenous ACTH concentration and two glucose and insulin concentrations (pre- and post-glucose administration).

An EDTA sample (for the endogenous ACTH concentration) and two serum samples (for the pre- and post-glucose and insulin concentrations) should be submitted.

**Season's Greetings  
and best wishes for  
the New Year from  
all at Vetpath.**

## AMH concentration to replace inhibin for diagnosis of GCT

Measurement of inhibin concentration has been the traditional method of diagnosis of granulosa cell tumours (GCT) in mares.

Anti-Mullerian Hormone (AMH) is also produced by the granulosa cells of the ovary. Unlike inhibin, AMH is not affected by pregnancy or stage of the oestrus cycle. AMH also has a much higher sensitivity (98%) compared to inhibin (80%) for diagnosis of GCT.

Vetpath has recently developed and validated the AMH assay for equine patients and will therefore no longer be offering inhibin testing.

**Reference:** Ball et al. EVJ 2013. 45 (2): 199-203.



NATA Accredited  
Laboratory Number 14776

### Vetpath Laboratory Services

RECEPTION DIRECT +61 8 9259 3600  
LOCAL COURIER PICK-UPS +61 8 9259 3666  
AFTER HOURS MOBILE 0418 916 436  
FACSIMILE +61 8 9259 3627  
EMAIL [enquiries@vetpath.com.au](mailto:enquiries@vetpath.com.au)  
WEBSITE [www.vetpath.com.au](http://www.vetpath.com.au)

### VETERINARY PATHOLOGISTS

Jenny Hill BVSc (Hons) Dip ACVP  
John Jardine BVSc MMedVet (Path) Dip ACVP MRCVS  
Jon Meyer BVSc DVSc Dip ACVP  
Jason Stayt BSc BVSc Dip ACVP  
Leanne Twomey BSc BVMS (Hons) PhD Dip ACVP