Customer FAQ Guide

IDEXX CBC™

Question	Answer
What is the IDEXX CBC™?	We are proud to introduce the IDEXX CBC™, offering the most advanced haematology testing service available, and designed to aid the diagnosis and differentiation of anaemias, as well as the detection of iron deficiencies for improved patient outcomes. The IDEXX CBC™ delivers a comprehensive automated CBC result including red cell indices, platelet indices, and 5-part white cell differential. PLUS, the IDEXX CBC™ enables a higher standard of care through the routine inclusion of an absolute Reticulocyte count and Reticulocyte-Haemoglobin (Retic-HGB) for all feline and canine CBCs.
What is regenerative and non-regenerative anaemia?	For all species except the horse, anaemia can be classified as non-regenerative or regenerative based on the bone marrow response assessed by the number of reticulocytes in circulation.Reticulocytes are rare in the horse. Non-regenerative anaemias have low reticulocyte counts. Note that some non-regenerative anaemias may be pre-regenerative (the anaemia has developed too recently for the regenerative response to have started; typically, <2-4 days). Regenerative anaemias have increased reticulocyte counts.
What is the response if the anaemia is regenerative?	Reticulocytes are released into circulation as part of a regenerative response to anaemia (except in the horse). Reticulocytosis in the absence of anaemia can be an indication of significant underlying disease accompanied by RBC loss or destruction with an adequate regenerative response (compensated anaemia), or in some cases is a physiological response with splenic contraction as a result of stress, or occasionally may flag a developing erythrocytosis. • Blood loss o CBC: Decreased RBC, haematocrit, MCHC, MCH Possibly increased MCV and RDW Reticulocytes Potentially decreased reticulocyte haemoglobin (RETIC-HGB) if chronic blood loss Platelets - variably decreased (consumption) Potentially inflammatory leucogram
What could be the response if the anaemia is non-regenerative?	• Anaemia of chronic inflammatory disease (causing iron sequestration) o CBC: Mild to moderate, stable anaemia +/- microcytosis +/- Hypochromasia (uncommon) Decreased reticulocyte haemoglobin (RETIC-HGB) Inflammatory leucogram • For more cases of non-regenerative anaemia refer to the drop down in VetConnect PLUS under Retic-HGB.

Customer FAQ Guide

Reticulocytes

Question	Answer
What is a Reticulocyte?	Reticulocytes are immature red blood cells that do not have a nucleus. The lifespan of a Reticulocyte is 1 – 2 days.
Why are Reticulocytes important?	Their presence in circulation is used to differentiate regenerative from nonregenerative anaemia. Reticulocytosis in the absence of anaemia can be an indication of significant underlying disease accompanied by RBC loss or destruction with an adequate regenerative response (compensated anaemia), or may reflect a physiological response, or occasionally a developing erythrocytosis. Reticulocytes should be evaluated along with the reticulocyte haemoglobin (RETIC-HGB) for early detection of blood loss and inflammatory conditions prior to the development of anaemia.
What would cause the release of reticulocytes?	Reticulocytes are released into circulation as part of a regenerative response to anaemia (except in the horse). Anaemia reduces the oxygen carrying capacity in the blood, with resultant release of erythropoietin in the kidneys, stimulating the increased production and release of reticulocytes from the bone marrow.
What is the benefit of trending reticulocytes?	Trending reticulocytes can help create a patient baseline and in turn help with the review of historical results and spot trends quickly if there is an increase or decrease outside of the normal reference interval. If a patient has consistently had a reticulocytosis when blood has been collected, and the haematocrit (HCT) is stable, it is most likely a physiological response. If there is a reticulocytosis with a reducing HCT, then underlying haemorrhage or haemolysis is more likely. VetConnect PLUS will trend results in a line graph over time which makes it easier to spot abnormalities.
Is an increase in reticulocytes related to specific organs?	No – The Reticulocytes reported in an IDEXX CBC™ are not organ specific. All parameters will provide the veterinarian with an overall view of the patient's internal health status.

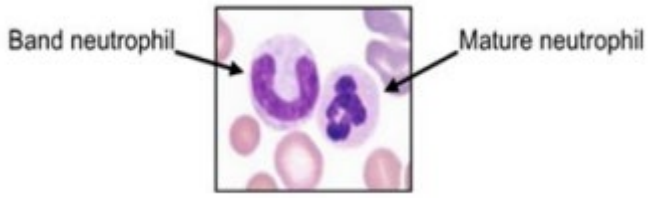
Reticulocyte-Haemoglobin (Retic-HGB)

Question	Answer
What is Retic-HGB?	Reticulocyte haemoglobin (Retic-HGB), also known as Retic-HGB, is the iron-containing oxygen transport protein inside reticulocytes. Reticulocyte haemoglobin reflects iron availability for developing erythrocytes and red blood cell function.
How long do Reticulocytes circulate in the blood? Why is this important for Retic-HGB tracking?	1-2 days in non-anaemic animals. As Reticulocytes have a short lifecycle of only 1-2 days, decreased reticulocyte haemoglobin provides a sensitive and early indicator of decreased iron availability caused by blood loss or inflammatory conditions.

Reticulocyte-Haemoglobin (Retic-HGB) Cont...

Question	Answer
What is the benefit of tracking haemoglobin in Retics?	Reticulocytes can carry haemoglobin. As Reticulocytes have a maturity cycle of 1-2 days circulating in the blood before they mature into adult RBCs, tracking the haemoglobin quality in these immature RBCs can give an indicator as to the iron availability for red blood cell production. Determining the reticulocyte haemoglobin concentration is important to know if the reticulocytes are developing sufficiently in the bone marrow and if they have reached their full oxygen carrying capacity. Retic-HGB is a sensitive and early indicator of decreased iron availability. If a patient has a low retic-HGB quantity, this can be caused by blood loss or inflammatory conditions.
What are common reasons for decreased retic-HGB?	• Blood loss o Haemorrhage o Parasitism • Inflammatory disease o Infection o Immune-mediated o Neoplasia • Combination of blood loss and inflammatory disease • Decreased intestinal uptake of iron • Iron-deficient diets (very rare) • Portosystemic shunts (PSS) • Breed associated microcytosis – for example Japanese Akita, Shiba Inu, Shar Pei, and Abyssinian cats.
Why is Retic-HGB a marker of iron availability?	Because of the short circulating time for reticulocytes (1-2 days), decreased RETIC-HGB provides a sensitive and early indicator of inflammatory conditions (causing iron sequestration) and blood loss (causing decreased iron stores) prior to the development of anaemia. This contrasts with changes in red blood cell indices (haemoglobin, MCHC, etc.) which may demonstrate a marked lag time (weeks to months) to become evident following the onset of blood loss or inflammation. RETIC-HGB levels are relatively stable during health. A downward trend in levels, even within the reference interval, in a patient is likely to be clinically significant and possible causes of decreased iron availability should be considered.

Band Neutrophils

Question	Answer
What is a band neutrophil?	A band neutrophil is an immature white blood cell (WBC) which is either not present or is present in very low numbers in the blood circulation in healthy patients. When band neutrophils are identified in the blood it is an indicator that the bone marrow has been signalled to release more WBCs usually as part of an inflammatory response. A higher level of band neutrophils points toward a more severe inflammatory response. Neutrophils are usually released from the bone marrow once mature, so to see band neutrophils in the blood should signal the vet to investigate why.
What is a left shift and why is this important?	A left shift is the term used to indicate that there are immature WBCs present in the blood. In the blood, you should normally see mature WBCs or segmented neutrophils. The left shift describes the production releasing a neutrophil lifecycle left of a mature neutrophil. Depicted here: 
How does a band neutrophil differentiate IDEXX?	A band neutrophil differentiates IDEXX as the in-clinic ProCyte Dx® and the IDEXX Reference Laboratory reports if band neutrophils are present in the sample. This early parameter of inflammation can help detect inflammation earlier, allowing earlier diagnostic testing and therapy. This increases vet and pet owner trust.

Additional Support Links

VetConnect® PLUS – Reticulocytes

VetConnect® PLUS – Retic-HGB

IDEXX Learning Center - Anemia: Regenerative versus Nonregenerative

Left Shift and Band Neutrophils