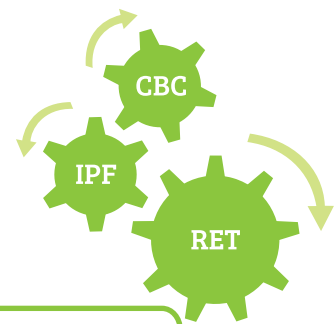


# CBC ADVANCED

## CBC + IPF + RETICULOCYTE



## COMPLETE BLOOD COUNT (CBC)



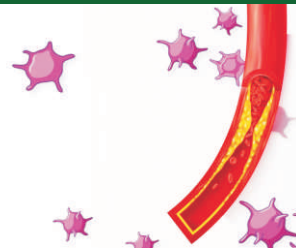
A complete blood count (CBC) is a blood test used to evaluate the overall health and detect a wide range of disorders, including anemia, infection and leukemia.

It measures several components and features of our blood, including RBC, WBC, Hemoglobin, Platelet, Haematocrit, MCV, MCH, MCHC, RDW, MPV with differential in % & #

## IMMATURE PLATELET FRACTION

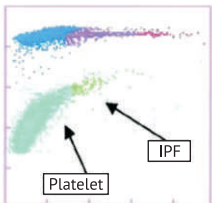
### INTRODUCTION

- The immature platelet fraction is a modern parameter that measures young and more reactive platelets in peripheral blood.
- A Unique Parameter to assist the Physician in the Differential Diagnosis of Thrombocytopenia.
- Automated haematology analyser equipped with PLT-F offer two diagnostic parameters; the absolute immature platelet count (IPF#) and the fraction of immature platelets related to mature platelets (IPF%).



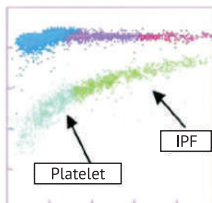
#### Normal

Platelet count 227 ( $\times 10^9/l$ )  
IPF 3.4%



#### ITP/PREG

Platelet count 74 ( $\times 10^9/l$ )  
IPF 53.8%



IPF has a high clinical utility in the laboratory diagnosis and treatment of thrombocytopenia since raised IPF levels are related to increased peripheral platelet destruction. It is particularly useful for supporting the diagnosis of autoimmune thrombocytopenic purpura (AITP), thrombotic thrombocytopenic purpura (TTP) and for distinguishing these from bone marrow suppression or failure. In the latter, the IPF value would be low.

### CLINICAL BENEFITS

- IPF can be used confidently to predict recovery of platelets in **patients of dengue- An IPF value of more than 10.0% indicates recovery of platelet count within 48 hours.**
- ITP, TTP, and DIC **patients demonstrate the highest IPF**, indicating active platelet production-ITP and TTP patients in remission have **normal IPF results.**
- The IPF can be a sensitive measure for evaluating thrombopoietic recovery during aplastic chemotherapy Patients with decreased production, including those undergoing cytotoxic chemotherapy, have IPF in the low or low normal range.
- Useful for monitoring patients after hematopoietic stem cell transplantation, when IPF values are not rising would indicate poor intrinsic thrombopoietic activity.
- IPF is a predictor of the efficacy of antiplatelet therapy and can be used to assess the risk of future cardiovascular thrombotic events.
- **IPF in Pregnancy:** Thrombocytopenia is a potential risk of bleeding during the labor. IPF <10% might be an independent bleeding factor which can be useful for detecting high risk pregnant patients.

# RETICULOCYTE



## INTRODUCTION

The comprehensive information is useful for physicians to assess the rate of red cell production and hemoglobinization. There are 3 parameters which can be reported with every reticulocyte.

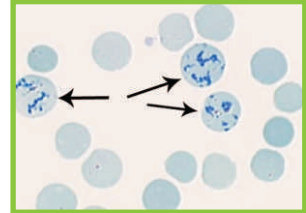
RETICULOCYTE COUNT

IMMATURE RETICULOCYTE FRACTION (IRF)

RETICULOCYTE HAEMOGLOBIN EQUIVALENT (RET-He)

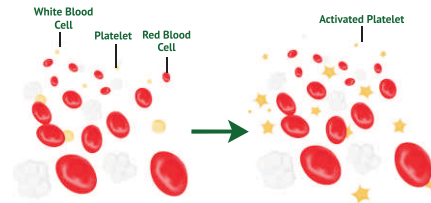
## RETICULOCYTE COUNT

- A good indicator of bone marrow activity because it represents recent production.
- Shows the erythropoietic status of the patient and if the production is healthy or not.
- The normal fraction of reticulocytes in the blood depends on the clinical situation but is usually 0.5 % to 1.5 % in adults and 2 % to 6 % in newborns.



## IMMATURE RETICULOCYTE FRACTION (IRF)

- The IRF value is an early marker for evaluating the regeneration of erythropoiesis.
- IRF% increase after only a few hours, the reticulocyte count is increased after 2-3 days.
- If the IRF value does not increase during the treatment of anaemias deficiency with erythropoietin or vitamins, this indicates a lack of response to therapy.
- Together, the IRF value and the reticulocyte count have proven themselves as monitoring parameters for bone marrow and stem cell transplants.



## RETICULOCYTE HAEMOGLOBIN EQUIVALENT (RET-He)

- RET-He represents the HGB content of young RBCs, the reticulocytes, and thus offers real-time information on iron supply to erythropoiesis and “judges” the quality of the newly produced cells
- Measuring the haemoglobin content of the reticulocytes as a direct assessment of the iron actually used for the biosynthesis of haemoglobin can indicate even in these cases whether there is enough iron available for erythropoiesis.
- RET-He is useful for monitoring erythropoietin (EPO) and/ or IV iron therapy. If the value increases it indicates the therapy is having a positive effect.
- A major advantage over the parameters ferritin or transferrin is that RET-He is not affected by the acute phase reaction.

## INSTRUMENT & TECHNOLOGY INVOLVED

- Automated Hematology Analyzer & Based on Flow Cytometry.

### SPECIMEN

- EDTA Sample

### TURNAROUND TIME

- Within 6 Hrs

