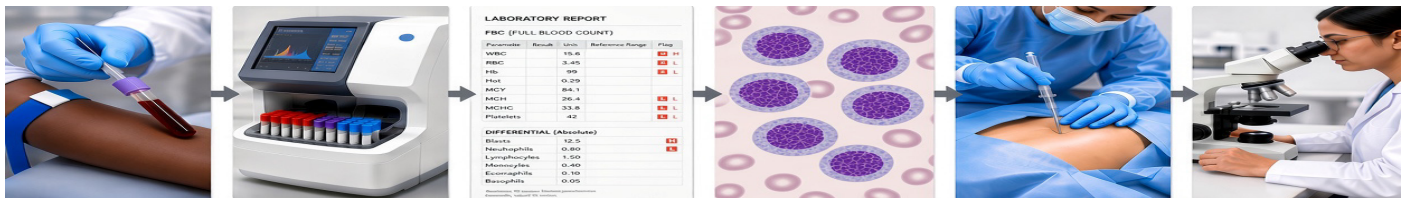


THE PATHCARE NEWS

BLOOD CANCER AWARENESS EDITION THE FULL BLOOD COUNT: A FRONTLINE TOOL IN CANCER DETECTION

The Full Blood Count: A Frontline Tool in Cancer Detection



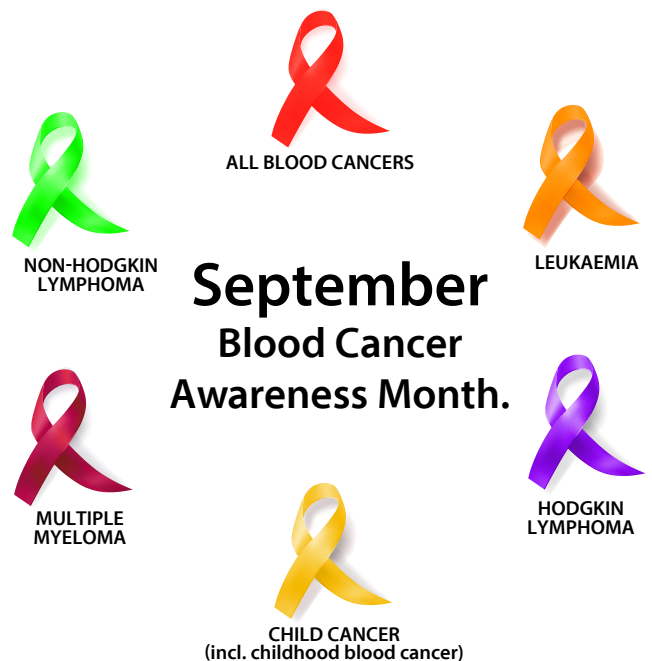
This Cancer Awareness Month, we highlight how one of the simplest and most affordable tests in medicine - the full blood count (FBC)- is often the very first clue to a haematological malignancy. A single abnormal result, read alongside the clinical picture, can open the door to early diagnosis and timely referral. This bulletin sets out how to interpret the FBC, which findings should prompt further action, and when to call us.

1. Why the FBC matters

- The FBC is one of the most frequently requested laboratory tests. It is inexpensive, quick, and remarkably informative. The parameters it measures — together with the morphological features seen on the blood film — can point directly to the next appropriate investigation.
- The single most important driver of interpretation remains the **patient in front of you**. A thorough clinical history and examination will alert you when a seemingly minor abnormality carries greater significance and warrants further work-up.

• **△ Clinical red flags — investigate further**

- Unexplained weight loss • fever • persistent fatigue
 - unexplained bleeding, bruising or petechiae
 - lymphadenopathy • organomegaly • soft tissue masses.
- When these features accompany an abnormal FBC, a blood film review is prompted.
- Findings we will proactively flag and act on include:
- Cytopenias and cytosis-New, chronic, persistent, worsening or unexplained
- New or unexplained leucoerythroblastic reaction
- Significant changes from previous FBC
- Analyzer flags or abnormal scattergram findings



September Blood Cancer Awareness Month.

2. FBC findings that warrant a closer look

Red cells:

- Abnormally shaped red cells (such as macrocytes, fragmentation, nucleated red cells).

White cells:

- Lymphocytes that are increased in number that may be monomorphic, larger in size, have cytoplasmic vacuolation or projections, abnormal nuclear configuration, etc.
- Plasma cells
- Increased left shifted granulocytes, monocytes, eosinophils, basophils
- Blasts-which are usually not seen in peripheral blood**

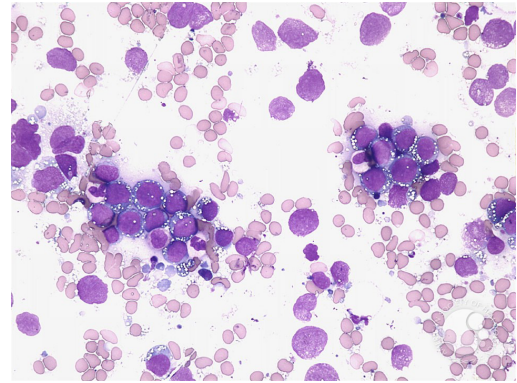
Plasma cells:

Dysplasia of one or more cell lines:

- One or more cell lines

3. Haematological emergencies –act- now

- The following require immediate referral, stabilization and management by a clinical haematology department:
- **Acute leukaemia** - especially acute promyelocytic leukaemia (APL, a subtype of acute leukaemia) with or without disseminated intravascular coagulopathy (DIC, a consumptive clotting disorder).
- Hyperleukocytosis with clinical evidence of leukostasis
- **Thrombotic thrombocytopenic purpura (TTP)**, a microangiopathic emergency
- Severe pancytopenia with or without circulating blasts.



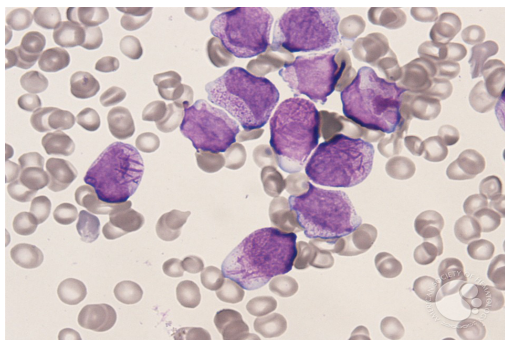
Burkitt leukaemia cells with vacuolated basophilic cytoplasm and smear cells
<https://imagebank.hematology.org/image/1116/burkitt-leukemia--1?type=upload>

4. When a bone marrow examination is needed

Some FBC findings point beyond the blood film to a bone marrow examination. We are happy to guide this step and arrange it with you.

Triggers include:

- **Acute leukaemia** - suggested by circulating blasts (the diagnosis is confirmed on a bone marrow, where blasts are $\geq 20\%$)
- **Unexplained cytopenias/cytosis** of ≥ 1 cell line that is unexplained These will help diagnose conditions such as aplastic anemia, hemophagocytic syndrome, myeloproliferative neoplasms, plasma cell dyscrasias, etc.
- **Dysplastic cells**-raising a possibility of a myelodysplastic syndrome (MDS), with or without excess blasts
- **Unexplained leucoerythroblastic reaction**-suspected bone marrow infiltration



APL blasts with Auer rods
<https://imagebank.hematology.org/image/5911/promyelocytes-with-auer-rods--02>

Talk to us

- Please contact the Pathcare Haematology department to assist with the work up of these cases, or to discuss laboratory results and morphological findings. We are here to help you reach the right diagnosis sooner.
- Tel: 012 644 2267 / 0658655364
- Email: haem.vmk@pathcare.net

References & further reading

- Shestakova G, Edgar NU, Rets AV. Common Hematologic Emergencies-Acute Promyelocytic Leukemia and Microangiopathic Hemolytic Anemias-A Pivotal Role of Clinical Laboratory. Int J Lab Hematol. 2026 Jun;48(3):521-530. doi: 10.1111/ijlh.14531. Epub 2025 Jul 16. PMID: 40667634; PMCID: PMC13155284.
- Suspected cancer and referral : NICE Guideline. NG12. <https://www.nice.org.uk/guidance/ng12>
- BSH Guideline: Diagnosis and management of adult aplastic anaemia (Br J Haematol 2024; 204 (3):784-804).
- BSH Guideline: Diagnosis and evaluation of prognosis of adult MDS (Br J Haematol. 2021;194(2):282-293;updated reference 2025,PMID 41069109).
- GP Adult Haematology Guidelines (Newcastle Hospitals NHS, v2024-08-01).
- <https://imagebank.hematology.org/image/5911/promyelocytes-with-auer-rods--02>
- <https://imagebank.hematology.org/image/1116/burkitt-leukemia--1?type=upload>

Prepared by:
 Dr. G.E. George-Tharakan (PATHCARE)
 Clinical Haematologist
 MBChB, FCPATH(Haem), Mmed(Haem), Cert.Clin.Haem (Path)