How to interpret haematology results to inform diagnosis and management

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The full blood count is the most requested haematology test. Learn how to interpret the results, including red cell and white cell indices and platelet count

Abstract

Accurate interpretation of a full blood count is a cornerstone of diagnostic decision making, empowering advanced practitioners to deliver informed and holistic patient care. Advanced practitioners must meticulously analyse full blood count results alongside clinical presentation and a thorough patient history and examination of the patient. This article explains how to interpret haematology results to inform diagnosis and management, with a focus on both red and white cell indices, as well as platelet count.

Introduction

The full blood count (FBC) is one of the most requested tests in healthcare, providing important information about the types and numbers of cells in the blood, such as red blood cells (RBCs) (erythrocytes), white blood cells (WBCs) (leukocytes) and platelets (thrombocytes). Interpreting the FBC is fundamental to clinical practice, as abnormalities can signify diverse underlying conditions. Advanced practitioners must, therefore, meticulously analyse FBC count results, alongside clinical presentation and a thorough patient history and examination. This allows them to use clinical reasoning to formulate an accurate understanding of the patient's condition and guide further diagnostic investigations and management strategies.

This article shows how to interpret FBC results as part of haematology testing in adults, with a focus on RBCs, platelets and WBCs. The FBC is requested for many reasons and is often part of a general health screen or to aid the diagnosis of underlying pathology. Table 1 shows the components of the FBC with their reference ranges; note, the reference ranges are laboratory specific, so always check local information.

Table 1. Full blood count and reference ranges

	Male	Female
Red blood cells		
Haemoglobin (Hb)	133-167 g/L	118-148 g/L
Red blood cell count (RBCC)	4.3-5.7 x 10^{12}/L	3.9-5.0 x 10^{12}/L
Haematocrit (Hct)	0.35-0.53 L/L	0.33-0.47 L/L
Mean cell volume (MCV)	77-98 fL	
Mean cell haemoglobin (MCH)	26-33 pg	
Mean cell haemoglobin (MCHC)	330-370 pg/L	
White blood cells		
Total white cell count	4.0-10.0 x 10^{9}/L	
Neutrophils	2.0-7.0 x 10^{9}/L	
Lymphocytes	1.0-3.0 x 10^{9}/L	
Monocytes	0.2-1.0 10^{9}/L	
Eosinophils	0.02-0.1 x 10^{9}/L	
Basophils	0.02-0.1 x 10^{9}/L	
Platelets	143-400 x 10^{9}/L	

Source: Moore et al, 2021

Red blood cells

RBCs are ~40% of blood volume and carry oxygen to tissues and some carbon dioxide to the lungs (Butler and MacArthur, 2024). Haemoglobin (Hb) in RBCs gives blood its red colour, with iron being a vital component (Butler and MacArthur, 2024).

All blood cells stem from haematopoietic stem cells, differentiating via haematopoiesis regulated by substances like erythropoietin. Produced mainly by the kidneys, erythropoietin regulates RBC production in response to tissue hypoxia (Hoffbrand and Steensma, 2019).

Immature RBCs have a nucleus, but this is expelled when in the bone marrow they mature into reticulocytes, precursors of RBCs. Without a nucleus, RBCs can't reproduce or repair themselves. RBCs have a 120-day lifespan and are broken down in the spleen by phagocytic cells (Butler and MacArthur, 2024).

The first step in identifying problems with the RBCs is to look at the following:

- Hb – the amount of Hb in the blood reflects the blood's oxygen-carrying capacity. A low Hb indicates anaemia and a high Hb indicates polycythaemia;
- Haematocrit (Hct) – also known as the packed cell volume, this is a measurement of the proportion (percentage) of the blood made up of RBCs. Hct is also related to the size of the RBCs, known as mean corpuscle (or cell) volume (MCV). Decreased RBC size will result in a low Hct and vice versa;
- Red blood cell count (RBCC) – this relates to the number of RBCs in the blood. It is helpful in giving a snapshot of a person's overall RBC status, which is used to diagnose specific types of anaemia (Doig and Zhang, 2017).

Reduced Hb, Hct, RBCC (anaemia)

Anaemia is the most common RBC disorder, with iron-deficiency anaemia being the most common type of anaemia worldwide (Booth and Provan, 2023). Anaemia is defined by the World Health Organization (WHO) (no date) as a condition in which the number of RBCs or the Hb concentration in them is lower than normal. The Hb result is the most reliable indicator of anaemia, as most instances will have an associated decrease in Hb.

To rapidly narrow down the causes of anaemia, consider the RBC size and colour using the MCV, mean corpuscular Hb (MCH) and mean corpuscular Hb concentration (MCHC). A reticulocyte count may also be provided as part of an FBC. These are all outlined below:

- MCV – gives information on the average size and volume of the RBCs. Anaemias are often classified by the size of the RBCs; microcytic refers to small RBCs, normocytic refers to normal-sized RBCs and macrocytic refers to large RBCs;
- MCH – provides information on the average amount of Hb per RBC. MCH decreases when Hb synthesis is reduced or when RBCs are smaller than normal;
- MCHC – shows the average concentration of Hb in a given unit of blood and, unlike MCH, measures the proportion of the RBC taken up by Hb. It can be used alongside MCV and MCH to classify anaemias;
- Reticulocyte count – used to measure the percentage of reticulocytes in the bloodstream to provide information about the rate of RBC production. A low reticulocyte count indicates

decreased RBC production, whereas a high reticulocyte count suggests increased RBC production.

Microcytic anaemia

This is a type of anaemia in which the RBCs are smaller (microcytic) and paler (hypochromic) than normal. The FBC will show a low Hb, Hct, MCV and MCHC.

The most common cause of microcytic anaemia is iron deficiency. Iron is one of the nutrients needed for erythropoiesis so a deficiency will result in the reduced production of RBCs. RBCs that are produced will lack sufficient Hb; as such, they will appear paler (as Hb gives the erythrocyte its colour) and smaller (because they contain less Hb than normal).

Iron deficiency is most commonly caused by malabsorption, but can also result from low dietary intake, blood loss or chronic disease. The most common cause of blood loss in pre-menopausal women is menorrhagia, while in post-menopausal women and men it is gastrointestinal loss (National Institute of Health and Care Excellence (NICE), 2023a). Although less common, a defect in Hb can also cause microcytic anaemia. Table 2 shows the causes of microcytic anaemia.

Table 2. Causes of microcytic anaemia

Cause	**Conditions**
Iron deficiency due to: ● **Malabsorption** ● **Blood loss** ● **Chronic disease**	**Inflammatory bowel disease** **Ulcers** **Menorrhagia** **Infections** **Autoimmune diseases** **Malignancy** **Chronic kidney disease**
Destruction of red blood cells due to: **Defect in haemoglobin**	**Thalassemia**

Source: Provan et al, 2015

Normocytic anaemia
Hb and Hct are decreased, but the MCV and MCHC are within normal limits as the RBC size is not affected. Normocytic anaemia is due to a drop in the number of RBCs in circulation, for example, in:

- Chronic disease;
- Bone marrow disorders;
- Nutritional deficiencies;
- Blood loss (Hoffbrand and Steensma, 2019).

Elevated reticulocyte count (reticulocytosis) indicates increased erythropoiesis in response to anaemia; it helps diagnosis.

Macrocytic anaemia
This is when the RBCs are larger (macrocytic) than normal. It is further divided into megaloblastic anaemia and non-megaloblastic anaemia:

- Megaloblastic anaemia – presents with immature RBCs with megaloblastic features, such as a large immature nucleus due to impaired DNA synthesis. While the MCV will be raised, the MCHC will be normal because Hb production is not affected. The main cause is vitamin B12 deficiency due to poor diet, nitrous oxide abuse and deficiency of intrinsic factor (pernicious anaemia);
- Non-megaloblastic anaemia – presents with macrocytes without megaloblastic features, resulting in elevated MCV, normal MCHC and low Hb levels. A raised MCV may also stem from reticulocytosis, as reticulocytes are larger than RBCs. Causes of non-megaloblastic anaemia include excessive alcohol intake (due to alcohol's toxic effects on the bone marrow), antimetabolite drugs, liver disease and pregnancy (NICE, 2024).

Management of anaemia
Important areas to cover in the history include dietary history, causes of potential blood loss (menorrhagia, melena), issues with malabsorption (for example, inflammatory bowel disease), family history of haematological disorders and symptoms of chronic disease (cardiac, renal, hepatic) (NICE, 2023a). Symptoms common to all types of anaemia are shown in Box 1, although symptoms may be absent and depend on how quickly the anaemia develops (NICE, 2023a).

Box 1. Signs and symptoms common to all anaemia types (Source: Butler and Macarthur (2024))

- **Dyspnoea**
- **Fatigue**
- **Headache**
- **Palpitations**
- **Tachycardia**
- **Dizziness, fainting**
- **Lack of concentration**
- **Angina, intermittent claudication**

The physical examination may reveal pallor, koilonychia (spoon-shaped nails), angular stomatitis (cracked skin at the corner of the mouth), glossitis (swollen, inflamed tongue), an irregular heart rate, an elevated respiratory rate and an enlarged liver or spleen. Further blood tests – such as ferritin levels, a blood smear to visualise the cell morphology and assessment of vitamin B12 and folate levels – may be needed.

Pre-menopausal and pregnant women with suspected iron-deficiency anaemia may be started on a diagnostic trial of iron therapy, such as daily ferrous sulphate. This should not be done in women who are post-menopausal or in men due to the higher risk of occult gastrointestinal bleeding or malignancy as a cause of the anaemia, which should first be investigated (NICE, 2023a).

Raised RBCC, Hb, Hct (polycythaemia)

Above normal levels of Hb indicates polycythaemia (or erythrocytosis) – an increase in RBCs. As RBCs contain Hb, this causes an elevated Hb estimation (Hoffbrand and Steensma 2019). When severe, it can cause increased viscosity of the blood, which puts the patient at risk of thrombotic events (Butler and MacArthur 2024).

Relative polycythaemia occurs as a result of dehydration and is not a true increase in the number of RBCs but a reduced amount of plasma in relation to the number of RBCs. This can be a result of reduced intake, diuretic use or plasma loss in burns, for example (Brown, 2012).

Absolute polycythaemia is a true increase in the number of RBCs in the blood. It can have a primary cause – such as polycythaemia vera (PV), which is a haematological cancer that causes excessive production of RBCs – or secondary causes, such as the appropriately increased production of erythropoietin in response to hypoxia (at altitude or in respiratory disease, for example) or inappropriate excess erythropoietin production due to renal disease (Butler and MacArthur 2024).

It is important to distinguish between relative and absolute polycythemia, as their underlying causes – and, thus, treatments – differ. The diagnostic criteria for PV are hypercellularity of the bone marrow, the presence of JAK2 mutation in blood cells or low levels of erythropoietin (Tefferi and Barbui, 2023).

Management of polycythaemia

A history should include asking about family history, body mass index, smoking status and alcohol intake. Common symptoms relate to hyperviscosity of the blood and include chest/abdominal pain, fatigue, headache, tinnitus, blurred or loss of vision and paresthesia. PV will also show signs such as bruising, itching, night sweats and painful/burning extremities. A physical examination may reveal a ruddy complexion, red conjunctiva, an enlarged spleen or abdominal masses that are causing the condition. Management will require referral to a haematologist (NICE, 2023b).

Platelets

Platelets are tiny cell fragments without nuclei, derived from megakaryocytes in the bone marrow through a process known as thrombopoiesis (Hoffbrand and Steensma, 2019). Their main function is their crucial role in haemostasis (arrest of bleeding). When blood vessels are damaged, platelets adhere to the site and aggregate together to form a platelet plug. Platelets provide a surface for coagulation, leading to the formation of a fibrin clot, which stabilises the plug and seals the wound (Butler and MacArthur, 2024).

Platelets have a short lifespan, typically lasting 7-10 days in the bloodstream. They play roles in haemostasis and are cleared from circulation, mainly in the spleen and liver (Oetjen and Dunbar, 2018).

The platelet count is performed as part of an FBC. However, if there are symptoms of a bleeding or clotting disorder, it might also be specifically used to diagnose or monitor diseases affecting the bone marrow or to monitor the effects of drugs known to affect platelets.

The use of automated counters means low platelet counts are a common incidental finding, and the practitioner needs to be able to differentiate benign from life-threatening causes through a comprehensive history, clinical examination and consideration of other blood results. A low platelet count might result from collection errors. If an unexpected result occurs, repeating the test using coagulation vials (citrated) is advised (Baccini et al, 2020; Provan et al 2015); this is because using ethylenediaminetetraacetic acid (EDTA) in vials for an FBC can lead to platelet clumping and inaccurate results. Notably, ~1-2% of people have an EDTA-dependent antibody in their blood, which can also cause false results despite the absence of bleeding symptoms (NICE, 2021a).

The platelet count measures the number of platelets (thrombocytes) in the blood and is reported as the number of platelets per microlitre (shown as 109/L). As an example, a platelet count of 350 x 109/L means there are 350,000 platelets per microlitre of blood. The normal platelet count is shown in Table 1. Having <143,000 platelets is known as thrombocytopenia; having >400,000 is a condition called thrombocytosis (Blann et al, 2021).

Reduced platelets (thrombocytopenia)

Thrombocytopenia is a condition characterised by a low platelet count. It can be inherited or acquired, and its causes are broadly grouped into four categories:

- Reduced production of platelets in the bone marrow;
- Increased platelet destruction/consumption;
- Sequestering of platelets in the spleen;
- Dilution of platelets in the blood.

Table 3. Causes of acquired thrombocytopenia

	Condition
Reduced production of platelets in the bone marrow	**Conditions affecting the bone marrow:** ● **Bone marrow metastases** ● **Myelofibrosis** ● **Sarcoidosis** ● **Aplastic anaemia** ● **Bone marrow failure (inherited or acquired due to malignancy, drugs, autoimmune or viral causes)** ● **Nutritional deficiencies (vitamin B12 or folate deficiencies)**
Increased platelet destruction/ consumption	**Immune or non-immune causes:** ● **Immune thrombocytopenic purpura (destruction)** ● **Disseminated intravascular coagulation (consumption)** ● **Drug-induced platelet destruction (for example, quinidine, quinine, non-steroidal anti-inflammatory drugs (NSAIDs), penicillin and anticonvulsants)**
Sequestering of platelets in the spleen	**Abnormal accumulation of platelets in the spleen:** ● **Liver disease, such as cirrhosis, liver cancer or hepatitis** ● **Infections, such as malaria, tuberculosis or HIV** ● **Hematologic disorders, such as leukaemia, lymphoma or myeloproliferative disorders** ● **Inflammatory conditions such as rheumatoid arthritis, systemic lupus erythematosus or inflammatory bowel disease**
Dilution	**Platelets in the blood being diluted by fluids that lower platelet concentration and raise bleeding risk:** ● **Blood transfusion** ● **Crystalloid infusion**

Sources: NICE 2021a; Warkentin et al, 2019

Management of thrombocytopenia
Thrombocytopenia is a symptom, not a diagnosis. Tests are needed to confirm its presence and management is tailored to its underlying cause. A comprehensive history including bruising, bleeding tendencies, recent infections, travel and heparin exposure is crucial. Physical examination should include checking for petechiae (tiny spots of bleeding under the skin or mucous membranes of the mouth or eyelids), purpura (collection of small blood pools under the skin), lymphadenopathy (swollen lymph nodes) and splenomegaly (enlargement of the spleen).

If no clear cause is identified, bone marrow examination and additional investigations for primary haematologic disease may be necessary (Rogers and Lehman, 2018). Severe cases may mean a platelet transfusion is needed (Provan et al, 2015).

Raised platelet count (thrombocytosis)

Thrombocytosis is a high platelet count and is more common than thrombocythemia. It is classified as either primary (essential) or secondary (reactive).

Primary thrombocytosis
Primary thromocytosis is caused by an abnormality in bone marrow function, whereby mutated blood stem cells or precursor cells called myeloid progenitors grow too much, leading to an increase in megakaryocytes (NICE, 2021b).

Conditions that can cause it include:

- Chronic myeloid leukaemia;
- PV;
- Primary myelofibrosis;
- Myelodysplastic syndromes;
- Hereditary thrombocytosis (Rogers and Means, 2018).

Hereditary or familial cases (in which there is a history of lifelong asymptomatic thrombocytosis) are rare. The course of the disease is milder than primary thrombocytosis and risk of thrombotic events is low; likewise the progression to leukemic or myelofibrosis is also rare (Rogers and Means, 2018).

Management of primary thrombocytosis
Routine screening can help identify individuals with primary thrombocytosis so a comprehensive health history, including family history and physical examination, is essential. Not all patients show symptoms, but those who do may have fatigue, dizziness, insomnia or migraines (Accurso et al, 2020). Some may first present with symptoms of a thrombotic event, such as stroke or myocardial infarction, or exhibit an enlarged spleen.

After a blood count has been done, a bone marrow biopsy and genetic testing for gene mutations may be requested to help diagnosis using the WHO diagnostic criteria (Putti et al, 2021).
Management of primary thrombocytosis is primarily about:

- Preventing a thrombotic event, as this is the most common cause of morbidity and mortality (Besses and Alvarez-Larrán, 2016);
- Health promotion around smoking and diabetes.

Primary thrombocytosis may mean platelet-lowering medications are needed, although these is not always indicated (Rogers and Means, 2018).

Secondary thrombocytosis

Secondary (reactive) thrombocytosis is in response to an underlying condition or stimulus including:

- Inflammation;
- Malignancy;
- Infection;
- Haemorrhage;
- Surgery;
- Trauma;
- Iron-deficiency anaemia;
- Drug therapy (for example, steroids) (NICE, 2021b).

Secondary thrombocytosis is more common than primary thrombocytosis, and accounts for >80% of cases (NICE, 2021b). It is driven by the overproduction of cytokines, including thrombopoietin, which occurs in response to inflammation, infection or neoplasm.

Management of secondary thrombocytosis.

Like primary thrombocytosis, patients are often asymptomatic, so a health history and physical examination are key to exploring the presentation or condition that brought it about. Specific attention should be given to any symptoms relating to infection and examination for lymphadenopathy. Patients usually present with symptoms of the underlying condition, not the thrombocytosis itself.

There is not usually an indication for platelet-lowering medication, as the risk of thrombosis is low (Alberio, 2016); rather, it is the diagnosis and management of the underlying condition that is a priority.

White blood cells (WBCs)

WBCs (leukocytes) are made in the bone marrow, before entering the bloodstream to safeguard against infections by seeking out and destroying pathogens. They can also move into the lymphatic system to produce antibodies, enhancing the body's immune response. Leukocytes are divided into two main groups: phagocytes and lymphocytes. Phagocytes are subdivided into granulocytes (neutrophils, eosinophils, basophils) and monocytes; each is expressed as a percentage of the total WBC count and has its own characteristic and function (Table 4).

Table 4. Characteristics and function of the white blood cells

White blood cell	Key characteristics	Function
Lymphocytes	● **Second most abundant white blood cell** ● **Fundamental immune cells for cellular and humoral immunity** ● **Belong to B system (production of antibodies) or T system (destruction of harmful pathogens)**	**Mainly target viral infections**
Neutrophils	● **Most abundant white blood cell and first responders at infection site** ● **Highly mobile** ● **Engulf and destroy bacteria**	**Mainly target bacterial and fungal infections**
Monocyte	● **Largest white blood cell** ● **Highly mobile** ● **Participate in inflammation** ● **Release cytokines**	**Mainly target bacterial infections**
Eosinophils	● **Release of histamine in allergic responses/inflammation** ● **Regulate hypersensitivity reactions** ● **Found in high concentrations in gastrointestinal tract, skin, and lungs**	**Mainly target parasitic infections**
Basophils	● **Least abundant type of white blood cell** ● **Regulate hypersensitivity reactions** ● **Release of histamine** ● **Involved in acute and chronic allergic diseases (for example, anaphylaxis, asthma, hay fever)**	**Main action is response to allergens**

The white cell indices quantify the total number of WBCs present, along with information about the body's ability to respond to infections and other immune system challenges. However, all should be interpreted in the context of the other white cell indices.

The total WBC count represents the total amount of all kinds of WBCs in the blood. All play an important role in phagocytosis, and the production of antibodies and defence against infection.

Generally, a low WBC count (leukopenia) increases the risk of infections, while a high WBC count (leukocytosis) may indicate infection or an underlying medical condition, such as leukaemia, lymphoma or an immune disorder.

Reduced white cell count (leukopenia)

Leukopenia is an abnormal reduction in the number of circulating WBCs, especially granulocytes (in particular, neutrophils and lymphocytes); the term 'neutropenia' is often used interchangeably with leukopenia (referring to a reduction in neutrophils), as monocytes, eosinophils and basophils comprise a relatively small proportion of the total WBC pool (Jacobson and Berliner, 2018).

On their own, low WBCs may not be significant, but they typically arise from diminished bone marrow production due to factors such as damage or dysfunction of the bone marrow (Solomou et al, 2021). While decreased bone marrow production is the predominant cause of leukopenia, increased destruction of WBCs can also contribute, although this is less commonly observed.

Table 5. Causes of leukopenia

	Condition
Infections	**The following viral infections, or certain types of bacterial infections, can suppress the bone marrow's ability to produce white blood cells:** ● **HIV** ● **Hepatitis** ● **Influenza**
Medications	**The following medications, or some antipsychotic medications, can cause bone marrow suppression:** ● **Chemotherapy drugs** ● **Antibiotics** ● **Antiepileptic drugs** ● **Immunosuppressants**
Immune-Mediated	**Autoimmune disorders where auto-antibodies cause the destruction of white blood cells:** ● **Systemic lupus erythematosus** ● **Rheumatoid arthritis (Felty syndrome)**
Bone Marrow Disorders	**Conditions that affect the bone marrow's ability to produce white blood cells:** ● **Aplastic anaemia** ● **Myelodysplastic syndromes** ● **Leukaemia**
Idiopathic	**In some cases, the cause of leukopenia may not be identified, referred to as idiopathic leukopenia.**

Sources: Jacobson and Berliner 2019; Provan et al 2015

Managing leukopenia

Managing leukopenia requires identifying and treating the underlying cause, so it is important to conduct a comprehensive health history (including drug history, recent weight loss and fever) and a physical examination, including checking for evidence of infection, lymphadenopathy and splenomegaly.

Management is mostly supportive, dependent on the cause and severity. If the cause can be identified, it should be treated; for example, febrile neutropenia is usually treated with antibiotics and fluids (Jacobson and Berliner, 2018). Patients with severe chronic disease may benefit from medication to stimulate WBC production in the bone marrow (Dale, 2016).

Raised white cell count (leukocytosis)

Leukocytosis is the broad term for an elevated white cell count, which is a common abnormal blood result in the acute setting (Thachil and Bates, 2016). It can be sub-categorised as follows, according to the type of WBC that is elevated:

- Neutrophilia – elevated neutrophils (the most common type of leukocytosis);
- Lymphocytosis – elevated lymphocyte count;
- Monocytosis – elevated monocyte count;
- Eosinophilia – elevated eosinophil count (Hoffbrand and Steenama, 2019).

The most common cause of leukocytosis is a healthy bone marrow reacting to inflammation or infection, which can increase leukocyte release, decrease margination or decrease extravasation from the blood vessels into the tissues. Alternatively, leukocytosis can be a result of underlying bone marrow disorders. Table 6 shows causes of leukocytosis.

Table 6. Causes of leukocytosis

Category	Cause	Conditions
Physiological response	Infection: stimulates the body to produce more white blood cells as part of the immune response	• Pneumonia • Urinary tract infections • Cellulitis • Bacterial meningitis. • Influenza
	Inflammation: triggers an increase in white blood cell production	• Rheumatoid arthritis • Inflammatory bowel disease • Vasculitis
	Tissue necrosis: leads to the release of inflammatory mediators, stimulating white blood cell production	• Trauma • Surgery • Burns • Tissue damage
	Medications: can cause leukocytosis as a side effect	• Corticosteroids • Lithium • Epinephrine
Bone Marrow Disorders	Certain bone marrow disorders can lead to an overproduction of white blood cells	• Myeloproliferative neoplasms (for example, polycythemia vera, essential thrombocythemia)
	Blood cancers can cause abnormal proliferation of white blood cells, leading to leukocytosis	• Acute or chronic leukemias

Source: Cashen and Van Tine, 2016

Management of leukocytosis

Leukocytosis is often acute and transient, secondary to a physiological response, so it is important to look for any trends in the FBC in the health history. In the acute setting, stress and infection are common presentations.

Significant and/or persistent WBC elevation should prompt a history taking and examinations for leukaemia or myeloproliferative disorders. Both are malignancies that affect the bone marrow and cause the overproduction of non-functioning WBCs (Austin and Patel, 2023). Typical symptoms to ask about in the health history include fever, night sweats, weight loss and fatigue. Social history is important to review, as smoking and some chemical exposures have been associated with bone marrow disorders (Mank et al, 2024).

Conclusion

Interpreting an FBC involves analysing the individual parameters in the context of the patient's health history, clinical presentation and examination findings. This comprehensive approach is crucial as abnormalities detected in the FBC can indicate a wide range of underlying conditions, including – but not limited to – anaemia, infection, inflammation or even leukaemia. As a crucial step in the diagnostic process, accurate interpretation of an FBC serves as a vital tool for advanced practitioners to make informed decisions about patient care and to formulate a comprehensive management plan.

- **Professional responsibilities** - This procedure should be undertaken only after approved training, supervised practice and competency assessment, and carried out in accordance with local policies and protocols.

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