

## A Note on Hematology in Biomedicine

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### Introduction

Hematology is the branch of medicine that studies the causes, diagnosis, treatment, and prevention of blood-related disorders. It entails treating disorders that impact blood production and its constituents, including blood cells, blood proteins, haemoglobin, bone marrow, blood arteries, platelets, spleen, and the coagulation process. Blood clots (thrombus), Hemophilia, various bleeding disorders, and blood malignancies like multiple myeloma, leukemia, and lymphoma are examples of these kinds of diseases. A medical laboratory scientist or a medical technologist is often responsible for blood analysis in the laboratory.

### Specialization

Hematologists or haematologists are doctors who specialize in haematology. Their primary responsibilities include caring for and treating patients with haematological disorders, while some might also work in a haematology laboratory, where they examine blood films and bone marrow slides below a microscope and interpret various haematological and blood coagulation test results.

### Hematopathology

The examination of diseases and abnormalities affecting and discovered in blood cells, their synthesis, and any organs and tissues engaged in hematopoiesis, including the spleen, bone marrow, and the thymus, is known as hematopathology or hematopathology. Hematopathology is frequently used in the diagnosis and treatment of diseases like leukaemia and lymphoma; techniques and technologies comprise flow cytometry investigations and immunohistochemistry.

Hematopathology seems to be a board-certified subspecialty in the United States, according to the American Board of Pathology. Pathology residents (clinical, anatomic, or combined) that have undergone hematopathology fellowship study following their pathology residency are generally board-eligible or board-certified hematopathologists.

Hematologists, hematology doctors, in certain institutions are also in charge of the haematology laboratory. Pathologists who specialize in the diagnosis of haematological illnesses, known as hematopathologists or hematopathologists, operate in haematology laboratories and most usually manage them. Hematologists and hematopathologists usually collaborate to make a diagnosis and, if necessary, give the best treatment. Hematology is a unique discipline of internal medicine that overlaps with medical oncology however is unique from it. In the United States, beginning haematologists undergo a four-year medical degree accompanied by three or four years of residency or internship. They continue their education by spending two or three years studying how to diagnose, investigate, and treat blood diseases after graduation. When applying for this job, most employers look for the first-hand experience in a recognized training program that teaches the following skills: determining the reason for abnormalities in the creation of blood as well as other disorders, utilizing experimentation to diagnose a variety of blood-related situations or cancers, and providing the best possible diagnosis and services to patients. The Annals of Hematology publishes articles on all aspects of clinical and experimental haematology, blood transfusion, hemostaseology, and related parts of medical oncology, such as lymphatic neoplasias, leukaemia, and solid malignancies, as well as hematopoietic stem cell transplantation. General topics of hematology-oncology, immunology, and molecular biology as they relate to human blood disorders are covered. The German Society for Hematology and Medical Oncology and the Austrian Society for Hematology and Oncology are both affiliated with the journal. Clinical haematology focuses on the diagnosis and treatment of blood and blood-forming tissue disorders.

In the field of haematology, diseases might include:

- Blood cells (red blood cells (RBCs), white blood cells (WBCs) and platelets);
- Other blood components;
- The hematopoietic organs (bone marrow, spleen, lymph nodes).