



## Editorial Announcement

### Editorial

Journal of Blood Research & Hematologic Diseases is a peer-reviewed scholarly journal that aims to publish the most complete and reliable source of information on the discoveries and current developments in the mode of original articles, review articles, case reports, short communications, etc. in all areas of blood-based medicine including basic and clinical sciences for blood and blood diseases.

Journal of Blood Research & Hematologic Diseases focuses on the topics include:

- Hematology
- Blood cells
- Genetics of Blood Cells
- Blood Physiology
- Blood Disorders & Diseases
- Etiology of Blood
- Pathophysiology of Blood Disorders
- Blood Malignancies
- Blood-based Therapeutics or Hemotherapy
- Transfusion Medicine
- Immunohematology
- Transplantation Studies

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### Blood

Blood is the red bodily fluid that circulates in human body providing the body its necessary substances such as nutrition, oxygen to and metabolic waste removal from cells. Blood is circulated through blood vessels, pumped by the heart and acts as the body's transport system.

### Blood Cells

Blood, a highly specialized tissue, is composed of Blood cells (Haemocyte), produced by hematopoiesis, suspended in Blood plasma. Blood cells are made in Bone Marrow and are categorized

into: Red blood cells, White blood cells and Platelets. These together add up to a total 45% of the blood tissue by volume and the remaining 55% is composed of Plasma.

### Hematology

Hematology is a branch of medicine pertaining to the study of blood, blood diseases/disorders related blood and treatment and prevention of the diseases that affect the production of Blood and its components. On whole, Hematology study, diagnosis and overall management of Blood disorders.

### Hemoglobin

Hemoglobin is a complex protein present in red blood cells containing an Iron molecule. It is an oxygen transport metalloprotein that carries oxygen from lungs to the body tissues, and maintains the shape of the red blood cells. Normal Hemoglobin contains four protein molecules: two  $\alpha$ -globulin chains and two  $\beta$ -globulin chains.

### Circulatory System

Circulatory System or Cardiovascular System is an organ system with a network of vessels and organs that permits blood to flow and circulate to transport necessary body substances to and from the cells. Heart, Blood and The Blood Vessels are the parts of the Circulatory System. Hemodynamics is the study of the blood circulation or flow and Hemorheology refers to the study of the flow properties of blood.

### Transfusion medicine

Transfusion Medicine is a branch of medicine that deals with the transfusion of blood and its components. The study concerns about the process of transfusion chain. The study of transfusion medicine includes: Processing of Blood products, Immunohematology, Stem cell research, Cell therapy, Apheresis.

### Hemostasis

Hemostasis is the arrest or the stoppage of bleeding, the Cloth formation. It is the process of arresting the blood flow from an injured blood vessel or organ of the body which requires the combined activity of vascular, platelet, and plasma factors. Any Hemostatic abnormalities lead to thrombosis (excessive bleeding).

### Hematopoiesis

Hematopoiesis or Hemopoiesis is the process of formation of Blood Cell Components. It is a process of blood cell production and maturation in the bone marrow. All types of blood cells are derived from pluripotent stem cells.

### Thrombosis

The process of formation of a blood clot, known as thrombus, in a blood vessel which obstructs or block the blood flow from an injured blood vessel or organ of the body is called Thrombosis. The movement of clots to the crucial parts of the circulatory system may cause serious complications.

### Blood Disorders

Blood is a multifaceted body fluid that acts as the medium to deliver the essential nutrients to tissues throughout the body. Any disturbance

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or disorders that prevent the blood to function properly may affect total health. Blood disorders affect one or more parts of the blood, which can be acute or chronic. Most common blood disorders include: Anemia, Bleeding Disorders and Blood Cancers.

### **Bleeding Disorders**

Bleeding Disorders are the group of medical conditions involving poor blood clotting or abnormal bleeding. Here the ability of the blood to clot is impaired leading to prolonged bleeding after the injury or surgery or spontaneous bleeding without known cause. The disorders can be inherited, acquired or side effects of certain drugs.

### **Blood Cancers**

Blood Cancers are a group of diseases that affect the production and function of blood cells, bone marrow and lymphatic system. These are characterized by unregulated cell proliferation of abnormal blood cells produced in the bone marrow that interrupts the functioning of Blood. There are three main groups of blood cancer: Leukaemia, Lymphoma and Myeloma.

### **Blood Vessels**

Blood vessels are the hollow tubes formed as intricate networks found throughout the body in which blood circulates or transport blood throughout the entire body. There are three types of blood vessels: arteries (carry oxygenated blood from the heart to all parts of body), veins (carry oxygen-depleted blood towards the heart), and capillaries (connect the arteries to veins).

### **Anemia**

Anemia is a condition in which there is a deficiency of red cells or of haemoglobin in the blood. The body does not produce enough healthy red blood cells to carry adequate oxygen to your tissues. Anemia is caused by blood loss, decreased red blood cells or by the destruction of red blood cells.

### **Leukaemia**

Leukaemia is cancer of blood-forming cells, a malignant progressive disease that affects the white blood cells that are produced by the bone marrow. Leukaemia affects the bone marrow and causes too many abnormal white blood cells to be produced impairing the normal functions of Leucocytes. Leukaemias are of two types: Myeloid and Lymphocytic Leukaemias.

### **Stem Cell Transplant**

Stem cell transplant or Bone Marrow Transplant is a medical procedure where the diseased bone marrow is replaced by infusing healthy and specialized that develop into healthy bone marrow. Hematopoietic stem cells (HSCs) are the stem cells found in bone marrow that give rise to the formation of Blood Cell Components through the process called Hematopoiesis. Stem cell transplantation is an effective treatment for a wide range of diseases like cancers, severe blood diseases and certain immune-deficiency diseases.

### **Lymphoma**

Lymphoma is a form of cancer that affects a part of the immune system, lymphatic system. Lymphoma is a group of blood cancers of immune cells called lymphocytes that develop in the lymphatic system. There are two broad types of Lymphoma: Hodgkin lymphoma and non-Hodgkin lymphoma (NHL).

### **Myeloma**

Myeloma or Multiple myeloma, is a cancer arising from a type of white blood cell called plasma cell, (made in the bone marrow) which are responsible for producing antibodies which are critical for maintaining the body's immune system. Multiple myeloma leads to the production of abnormal proteins- M proteins which impair the function of Plasma cells and may damage kidneys, cause tumors, kidneys, and impair immune system function. Multiple myeloma is the second most common blood cancer.

### **Blood Coagulation**

Blood Coagulation or Clotting is a process by which a blood clot is formed to block or prevent bleeding. It is the process by which blood changes from a liquid to a gel. Coagulation involves two components: cell (platelet) enmeshed in a network of insoluble fibrin molecules and protein (coagulation factor).